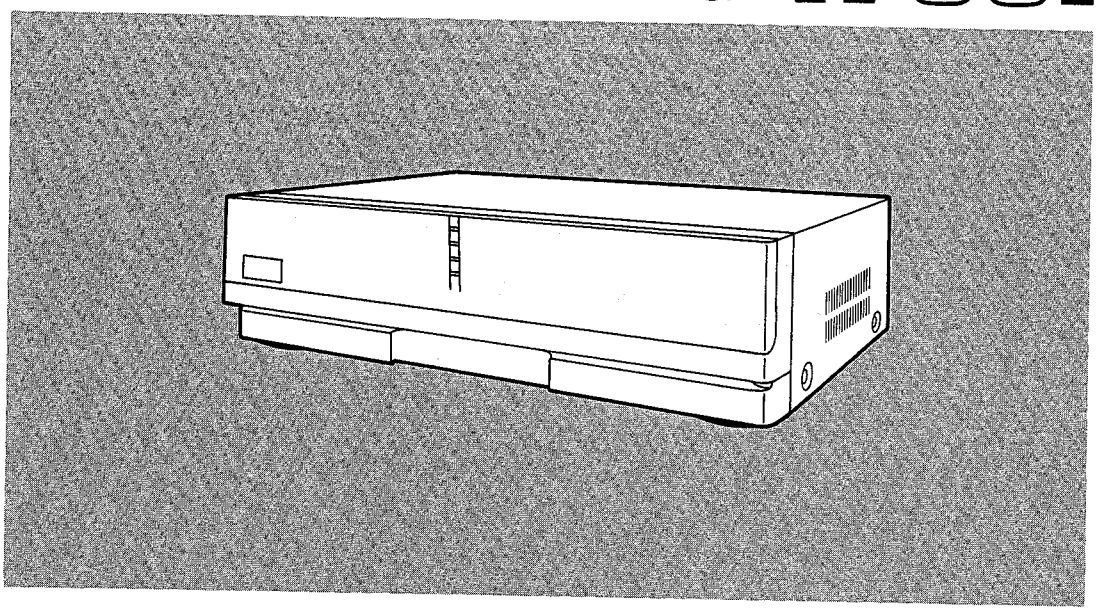
Operating Instructions

S-VHS 625 VHS PAL Hi-Fi

Video Cassette Recorder

AG-4700E



Panasonic

Before attempting to connect, operate or adjust this product, please read these instructions completely.

VQT6023

(2)

IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

Remarks

1 This VTR is capable of receiving SECAM type broadcasting programmes (SECAM B/G) and recording/playing back its colour television signals.
2. When a cassette which has been recorded on this VTR is played back on a SECAM VTR, the picture may be reproduced in black and white. When it is played back on a PAL VTR without SECAM capability, the picture may be not reproduced in normal colour.
3. When cassettes recorded on a SECAM VTR or SECAM pre-recorded cassettes are played back on this VTR, the picture is reproduced in black and white.
4. This VTR is not designed for use in France, where a SECAM VTR should be used instead.

This model conforms to the EC directive (for radio interference) 87/308/EEC.

FOR YOUR SAFETY

■ **DO NOT REMOVE OUTER COVER.**
To prevent electric shock, do not remove cover No user serviceable parts inside. Refer servicing to qualified service personnel.

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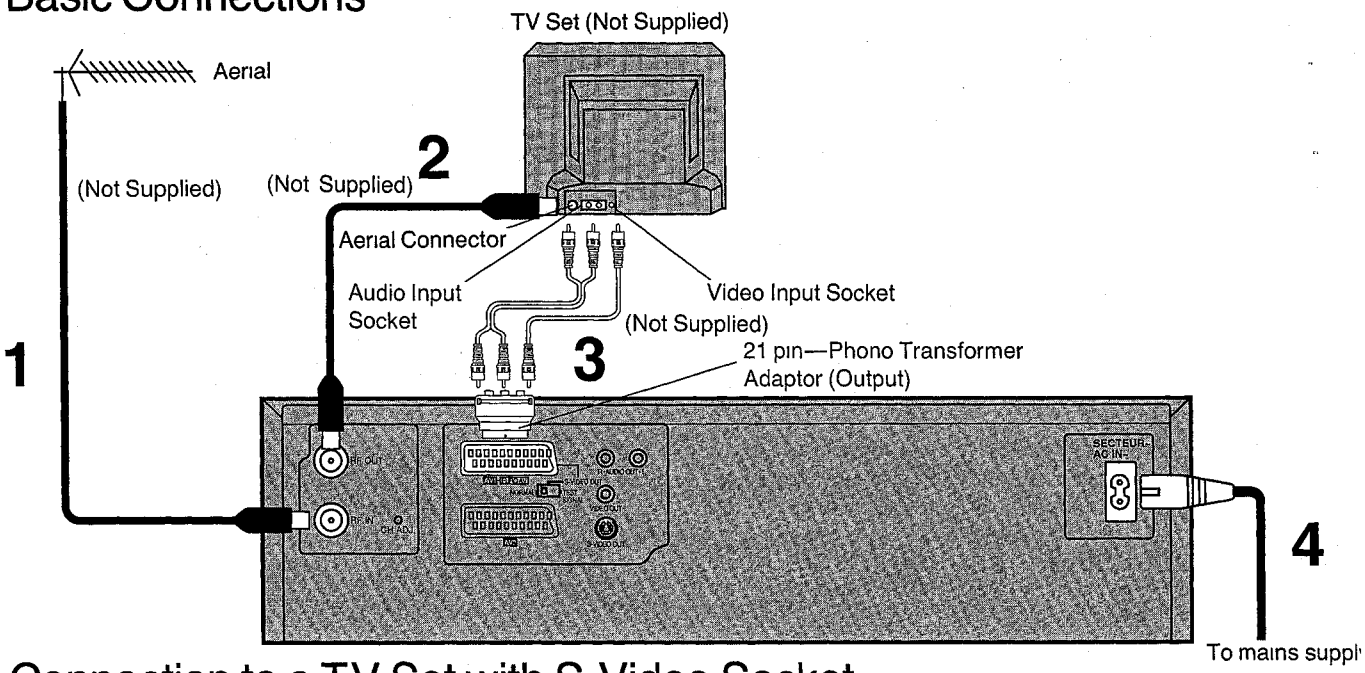
Connections

This tells you how to connect with an aerial, TV, VTR, etc.

Basic Connections

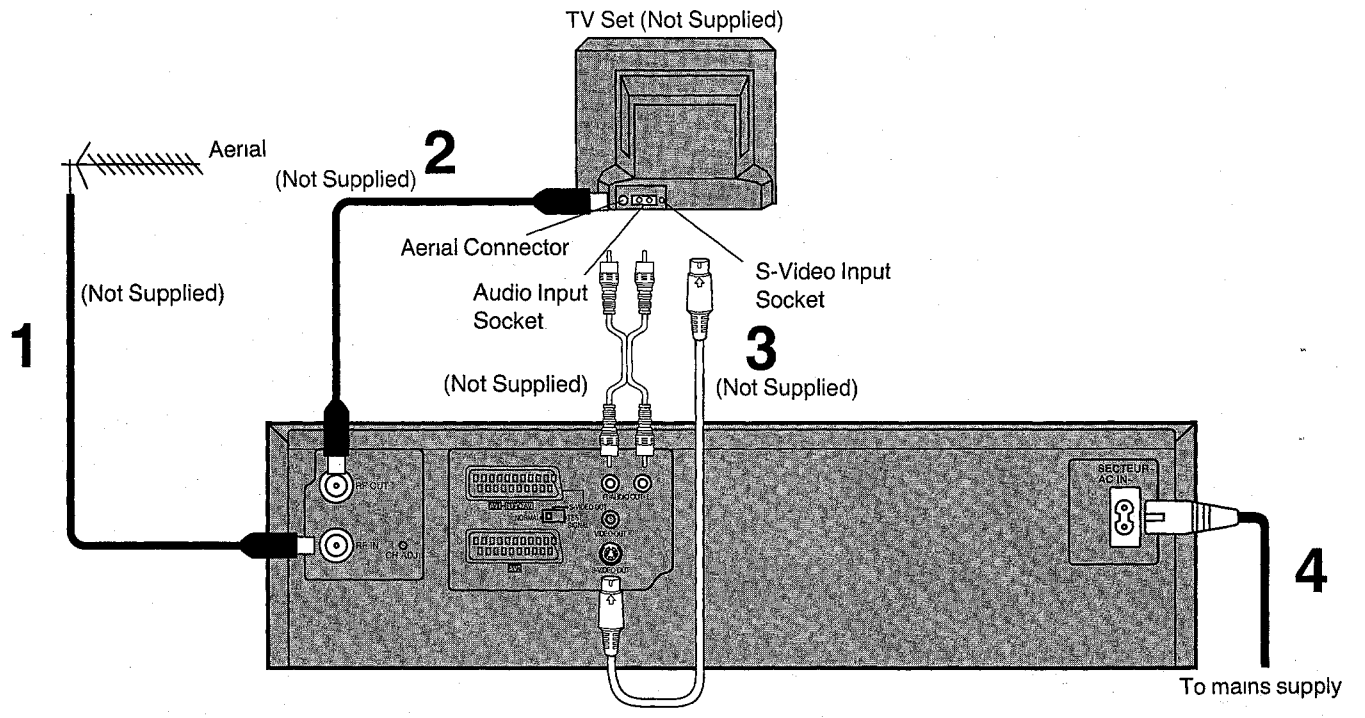


Connection to a TV Set with S-Video Socket

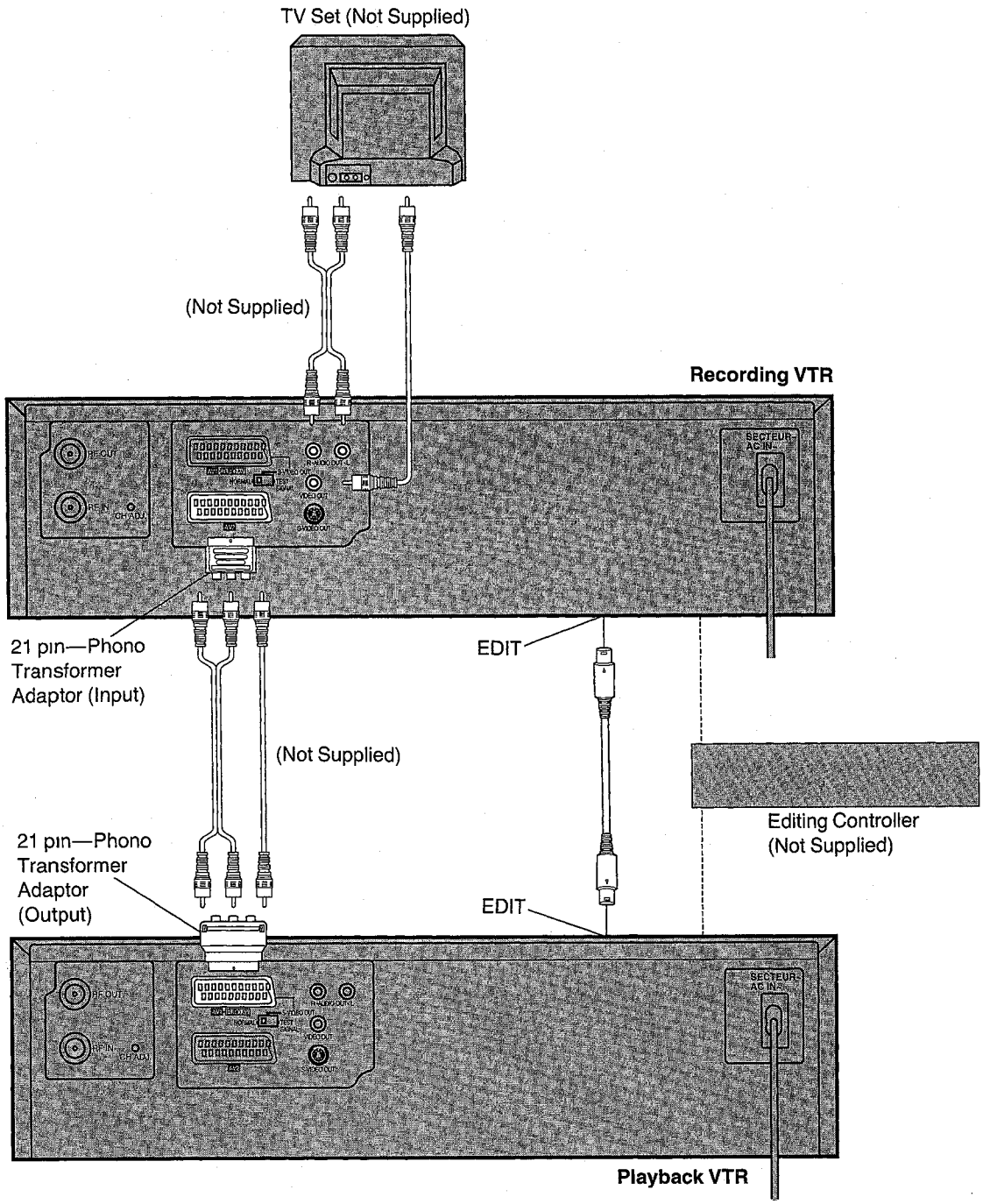
This VTR uses the S-VHS format that makes it possible to obtain high resolution and high picture quality by using the high-performance S-VHS video cassette tapes.

The conventional video sockets of VTRs output (input) a combination of the luminance signal (Y) and colour signal (C) which are recorded on the video tape. The new S (Separate)-Video Socket allows separate transmission of signals in order to obtain clearer pictures.

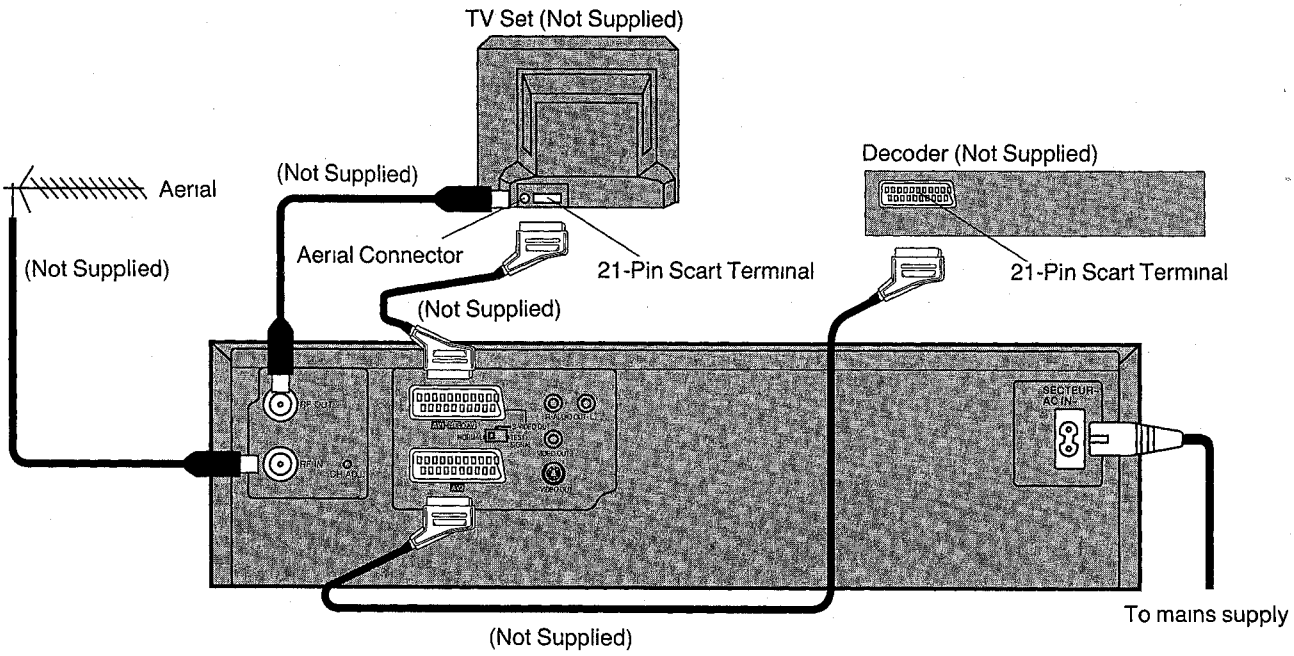
The connection with the S-Video Cable can also be used for playback of a tape that was recorded in the conventional VHS system. The "S" in the "S-Video Socket" stands for "SEPARATED Y/C" not for "S-VHS"



Editing Connections



Connection to a Decoder



Note:
If the TV set is provided with an RGB-compatible connector, connect the 21-pin AV cable from the VTR to this connector. Use full-pin 21-pin AV cables for connecting the TV set and VTR and for connecting the VTR and decoder.

AV LINK

With this button the connected colour TV set can be switched from TV mode to VTR mode (vice versa) when it is connected by means of 21-pin scart cable.

This makes a variety of functions possible, such as simultaneous recording and viewing when a Pay TV decoder or a satellite receiver has been connected.

VTR mode (VTR indicator lights):
To enjoy sound and pictures from the VTR.

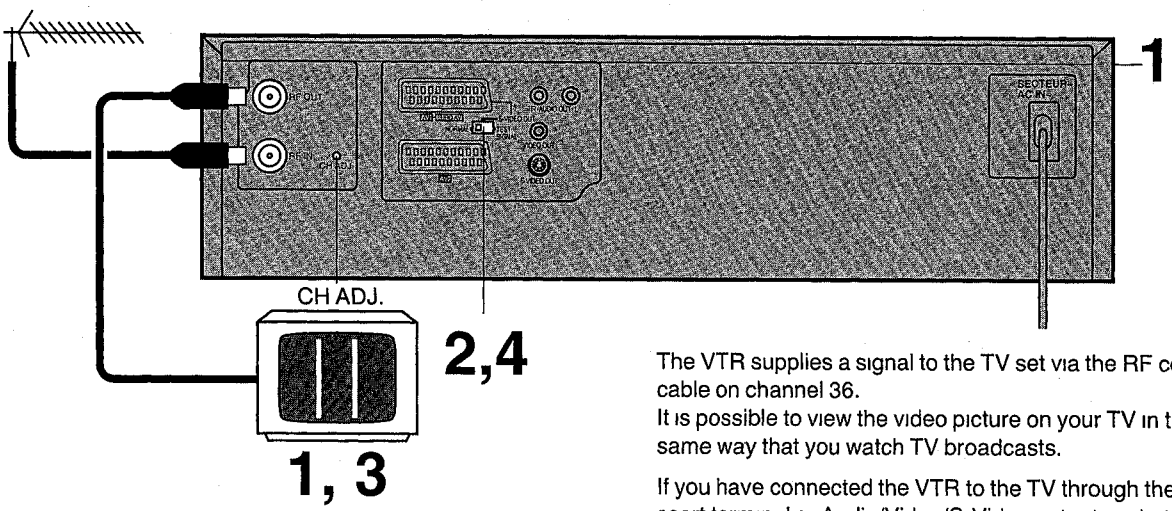
TV mode (VTR indicator goes off):
To watch another programme on the TV while recording on the VTR.

- Select the programme to be watched using the TV set's tuner.
- The sound and pictures of a different channel are received by the VTR.

VTR		TV set
Power On	VTR mode	AV input selected
	TV mode	Input from TV set's tuner*
Power Off	—	Input from TV set's tuner

*When the VTR is set to the TV mode and the Pay TV channel is selected, the signals will still be scrambled even when Pay TV is selected by the TV set's tuner At a time like this, either set the VTR to the VTR mode or switch the TV set's input signals to AV input.

Tuning the TV to your VTR



The VTR supplies a signal to the TV set via the RF coaxial cable on channel 36.
It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.

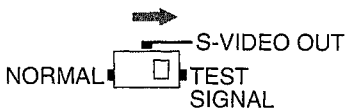
If you have connected the VTR to the TV through the 21-pin scart terminal or Audio/Video/S-Video output sockets then you do not need to follow the procedure mentioned below.

Operations

1

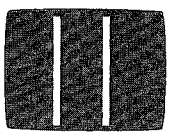
Turn on the TV and VTR.

2



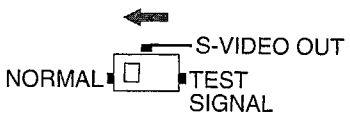
To generate a test pattern, set **NORMAL/ S-VIDEO OUT/TEST SIGNAL** to TEST SIGNAL.

3



Set the TV to an unused position which you wish to use for your video playback.

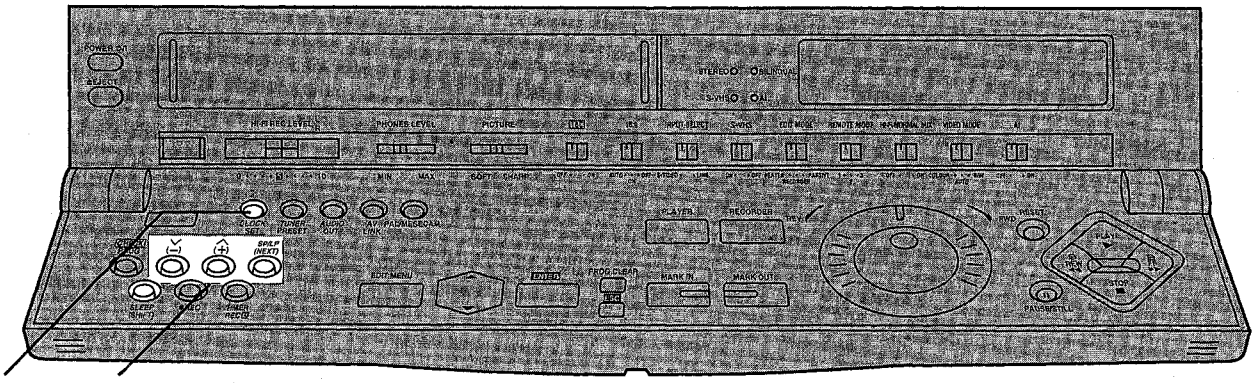
4



Set **NORMAL/S-VIDEO OUT/TEST SIGNAL** to NORMAL.

Note:
The test signal is transmitted on video channel 36. If you are encountering interference from a TV broadcast on this video channel, you may readjust to another free channel (32~40) by using the **CH ADJ.** screw which is located on the rear of the VTR. When rotating the **CH ADJ.** screw, take care not to turn it too far
Please note that if the **CH ADJ.** screw is used then you will have to retune your TV to the test signal as in item **2** to **4** above.

Setting the Clock of the VTR



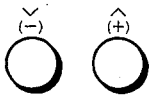
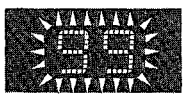
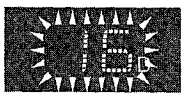
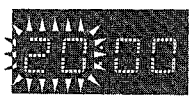
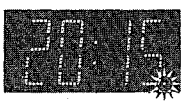
1,3 2

The built-in clock is used to activate the timer for automatic recording and must be set to the correct time.

The built-in digital clock employs the 24-hour system.

Preparation
Turn on the VTR.

For Example:
Date; 16th, October, 1999
Time; 20:15

Operations	Display Symbols	
1 CLOCK SET		Keep **CLOCK SET** pressed for more than 2 seconds.
2 Set each item by pressing ∧ (+) or ∨ (−) and **SP/LP (NEXT)**.		
 (−) (+)		Set **Year** "99".
		Set **Month** "10".
		Set **Date** "16".
		Set **Hour** "20".
SP/LP (NEXT)		Set **Minute** "15". • There is no need to press **SP/LP (NEXT)**.
3 CLOCK SET		Press **CLOCK SET**. • The clock will start.

Note:
The clock operates for at least 60 minutes by its backup system in the event of power failure.

Time Reset Function

If the clock is less than two minutes slow or fast, it can easily be reset to the proper time.

For example:
Resetting the clock to 12:00.00

1 Keep **CLOCK SET** pressed at any time between 11:58.00 and 12:01.59 for more than 2 seconds.

2 Press **CLOCK SET** again as soon as you hear the 12:00.00 time signal.

Summer Time Function

Setting to summer time

1 Keep **CLOCK SET** pressed for more than 2 seconds.

2 Press **SLEEP (SHIFT)**.
- The time on the clock is advanced by 1 hour

3 Press **CLOCK SET**

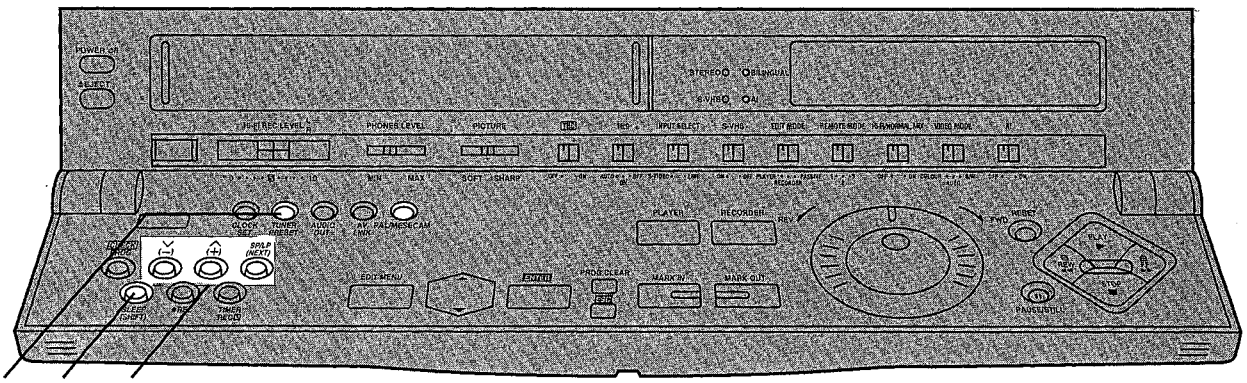
Returning from summer time to standard time

1 Keep **CLOCK SET** pressed for more than 2 seconds.

2 Press **SLEEP (SHIFT)** twice.
- The time on the clock is set back by 1 hour

3 Press **CLOCK SET**

Storing TV Broadcasts into your VTR



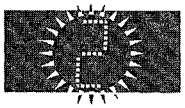
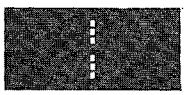
1,5 3 2,4

Introduction

The VTR is fitted with its own tuner (just like a normal TV set) and can be pre-set to receive up to 99 TV broadcast stations.

Preparation

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR and Select the programme position except A1, A2 and A3.

Operations	Display Symbols	
1 TUNER PRESET		Keep **TUNER PRESET** pressed for more than 2 seconds.
2 (−) (+) SP/LP (NEXT)		Select the programme position, then press **SP/LP (NEXT).**
3 SLEEP (SHIFT)		Select normal TV station or Pay TV station. •1 To preset normal TV stations. •2: To preset Pay TV stations.
4 (−) (+)		Search for the required TV station. •Press **PAL/MESECAM** to select the broadcasting system for the TV station to be tuned. PAL. MESECAM indicator should not be lit. SECAM: MESECAM indicator should be lit. •Press **SP/LP (NEXT)** and repeat steps **2–4** for each programme position you want to tune to a station.
5 TUNER PRESET		Press **TUNER PRESET** twice.

Fine Tuning Procedure

1 Keep **TUNER PRESET** pressed for more than 2 seconds, and then press again.

2 Press **SP/LP (NEXT)**.

3 Press ∧ (+) or ∨ (−) to obtain the best tuning condition.
- "AFC" Indicator disappears.
- To return the tuning to its former state, press **SLEEP (SHIFT)**.

4 Press **TUNER PRESET**

Blanking of Unoccupied Programme Positions

1 Keep **TUNER PRESET** pressed for more than 2 seconds.

2 Select a programme position which you do not want to tune to a TV station, by using ∧ (+) or ∨ (−).

3 Press **SLEEP (SHIFT)**. ("−−" is displayed.)
- Repeat steps **2** and **3** for another unoccupied programme positions to skip during the selection of the programme positions.
- To cancel the blanking of a programme position, select that programme position on the VTR and then press **SLEEP (SHIFT)**.

4 Press **TUNER PRESET** twice.

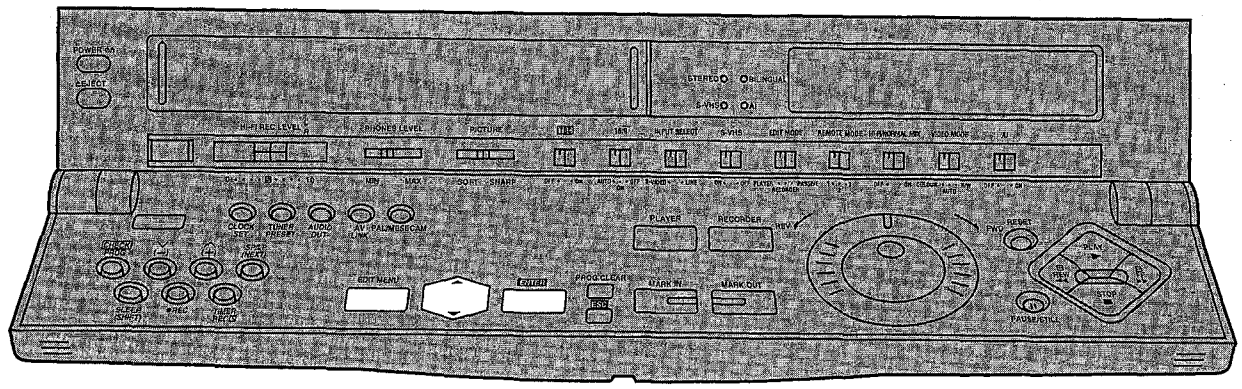
Channel Plan

Channel Indication	TV Channel	
	Germany/Italy	Other Countries
2–12	*E2–E12	E2–E12
13–20	A–H (Only Italy)	—
21–69	21–69	21–69
74–76	—	S1–S3
80–82	—	M1–M3
83–89	S4–S10	M4–M10
90–99	S11–S20	U1–U10
121–141 Hyperband	**S21–S41	S21–S41

*In Italy: H1...(11), H2...(12)
**Only for 8 MHz channel raster

Note:
This VTR does not support NICAM broadcast audio multiplexing.

Initial Settings Using On Screen Displays

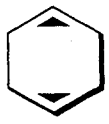


Preparation

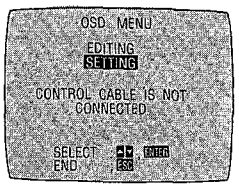
- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR.

1 Press **EDIT MENU**.

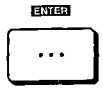
2 Select **SETTING**.



On Screen Display



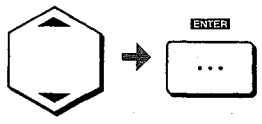
3 Press **ENTER**.

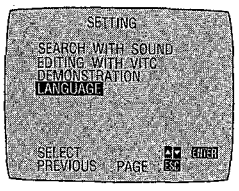


To select the Desired Language

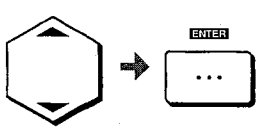
Select one of the seven languages displayed: English, German, French, Italian, Spanish, Dutch and Swedish. Follow steps **1** to **3** of the above procedure.

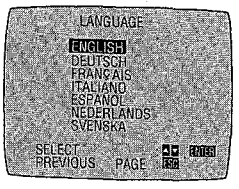
4 Select **LANGUAGE**.





5 Select the desired language.

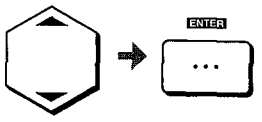


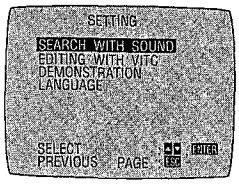


To select Sound Setting

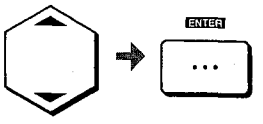
Follow steps **1** to **3** of the above procedure.

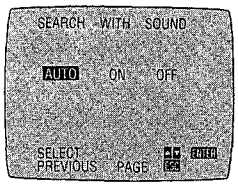
4 Select **SEARCH WITH SOUND**.





5 Select the desired setting.



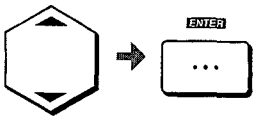


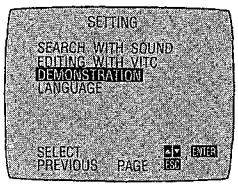
AUTO: The sound can be heard during special playback only when an editing operation is in progress.
ON: The sound can be always heard during special playback.
OFF: The sound can not be heard during special playback.

To View a Demonstration

Follow steps **1** to **3** of the above procedure.

4 Select **DEMONSTRATION**.





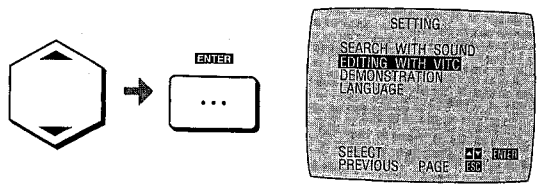
- The On Screen Displays for editing are displayed one after the other at about five second intervals.

VITC (Vertical Interval Time Code) Function

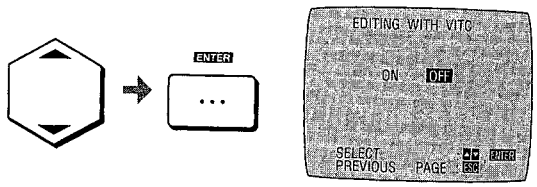
As an address (individual number) is recorded for each frame, it is possible to find the accurate position of any desired scene or picture on a tape by checking the address during playback. This address is called "Time Code" Since the VITC signals (Vertical Interval Time Code) are recorded together with the picture signals, they will not be cancelled even when the video cassette is taken out from the VTR or the VTR is switched off. This makes it possible to check the precise position of any desired picture at any time.

Follow steps **1** to **3** of the above procedure.

4 Select **EDITING WITH VITC**.



5 Select the desired setting.



ON: For reading the VITC signals during playback and writing them during recording.
The time code is indicated on the counter in increments of hours, minutes and seconds. During programme editing, it appears on the screen in increments of hours, minutes, seconds and frames (25 frames per second).

OFF The normal counter is displayed.

Reading the VITC signals

"– – – –" appears on the counter when the cassette is inserted. When playback is started, the VITC signals are read and the time code is displayed.

- When VITC signals have not been written on the tape, the time code is not displayed.
- When playing back the tape with VITC signals recorded on another VTR, set **PICTURE** to the center position or **AI** to ON. Otherwise, VITC signals may not be read.

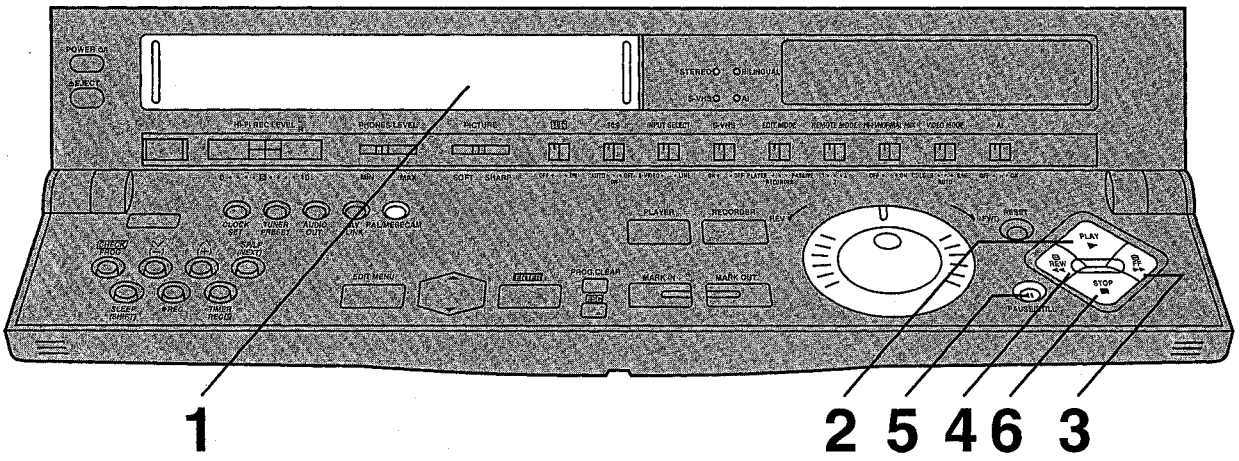
Writing the VITC signals

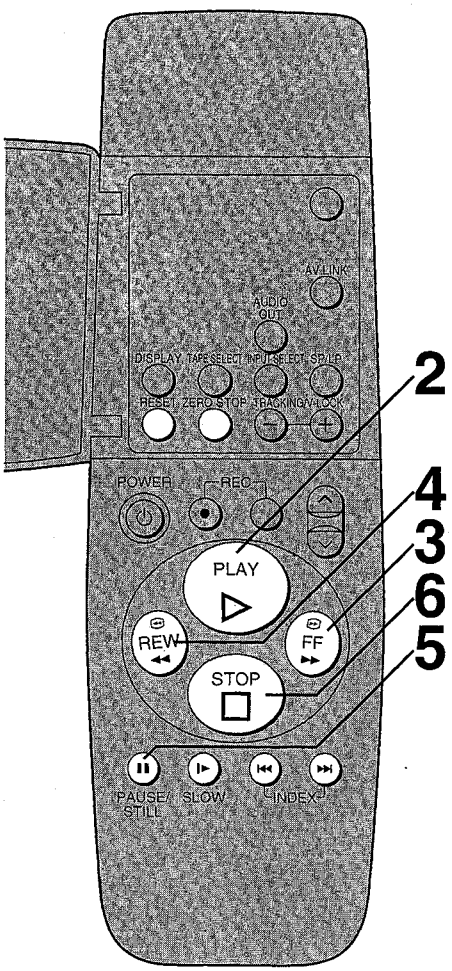
"– – – –" appears on the counter when the cassette is inserted. When recording is started, the VITC signals are written starting at 0h00m00s00f.
If recording is started after the tape has been played back and the VITC signals read, the VITC signals will be written following on from the time code which is displayed on the counter at that time.

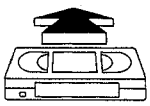
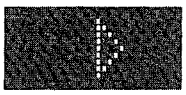
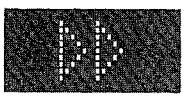
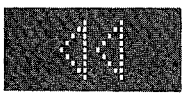
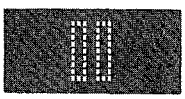
Notes:

- To use the VITC function to edit, be sure to first turn on the VITC function with the procedure described above, then begin editing after cancelling all editing programmes used last time.
- When tracking is out of adjustment, the VITC signals may not be properly read.
- The counter cannot be reset when the VITC function is on. This is because the VITC signals are recorded on the tape.
- Unplugging the AC mains lead returns the VITC setting to OFF
- Editing using the VITC function cannot be performed with movie cameras which have edit sockets (5-pin).
- The editing accuracy when using the VITC function is approximately ±3 frames. This accuracy decreases to approximately ±8 frames when record and pause are repeated.
- To make optimal use of the advantages offered by the VITC function during editing, this VTR should be connected to another AG-4700 also equipped with the VITC function.
  When this VTR is to be connected to another unit which is not equipped with the VITC function, the editing precision will be increased if the AG-4700 is used as the playback VTR.
- There are two types of frame display: one represents what is read from the VITC signal and the other indicates what is read from the linear counter This means that when a conventional VTR or a movie camera with no VITC function is used as the player, the frame count on the player will also be displayed when the VITC function is activated on the AG-4700. However, if this frame count is the one which has been read from the linear counter, the editing accuracy will be less than that when a unit with VITC function is used.
- Since this unit does not come with a function for reading the VITC signals of the player, a model equipped with a VITC reading function must be used as the player in order to improve the editing accuracy.

Playback





Operations	Display Symbols	
1		Insert a recorded cassette tape.
2 PLAY		Start viewing the picture.
3 FF		Search forward by tapping **FF**. •To change back to normal playback, press **PLAY**
4 REW		Search backward by tapping **REW**. •To change back to normal playback, press **PLAY**
5 PAUSE/ STILL		View a still picture. •To continue the normal playback, press **PLAY** or **PAUSE/STILL**.
6 STOP		Stop viewing the picture.

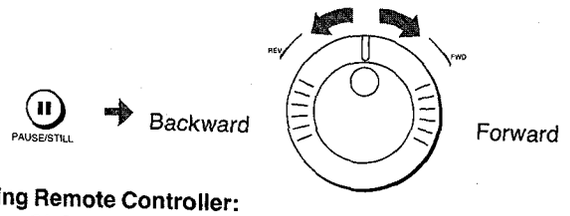
Other Playback Functions

To change the Playback Speed

Using Shuttle Ring:

1 Press **PAUSE/STILL** on the VTR.

2 Rotate Shuttle Ring.



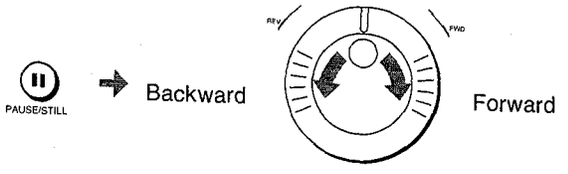
Using Remote Controller:

Press **SLOW** during playback to activate slow playback.

To locate the Desired Picture exactly

1 Press **PAUSE/STILL** on the VTR.

2 Turn Jog Dial.



To obtain High Speed Picture during Fast Forward or Rewind

Keep **FF** pressed during fast forward.
Keep **REW** pressed during rewind.

To return to a Specified Scene

1 Press **RESET** to set the counter to 0:00.00.

2 After playback, press **ZERO STOP** in the stop mode.

- The tape will be rewound or fast forwarded to 0:00.00.

VHS Index Search System

It is very easy to find the beginning of each recording, because a special index signal is recorded at the start of each recorded segment on the tape.

For example:

Searching for the 2nd recorded segment in the forward direction.

Press **INDEX ▶▶|** twice.

- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press **INDEX |◀◀**
- Up to 20 programmes can be searched for in both directions.

Recording Index Signals

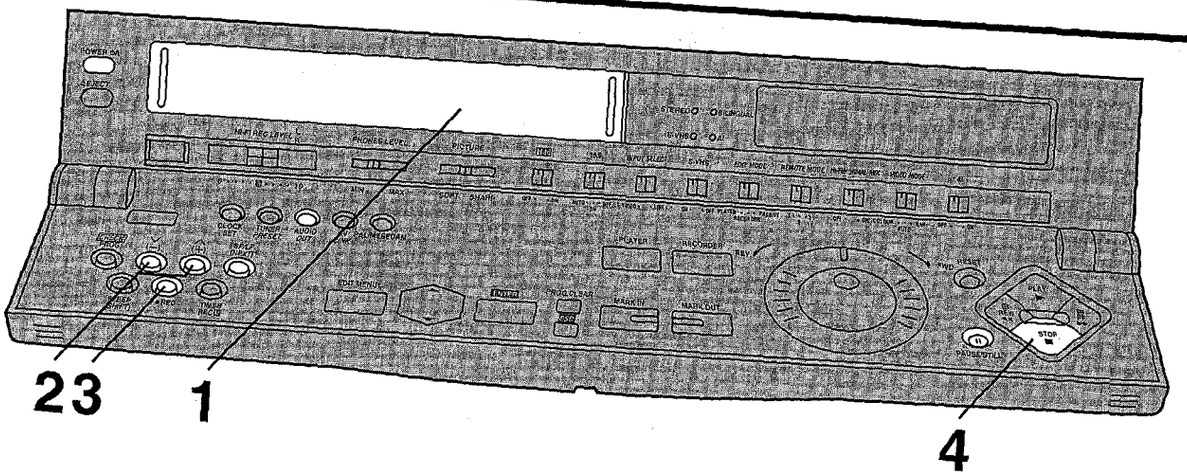
Index signals are recorded in following cases.
WRITE indicator appears on the Display.

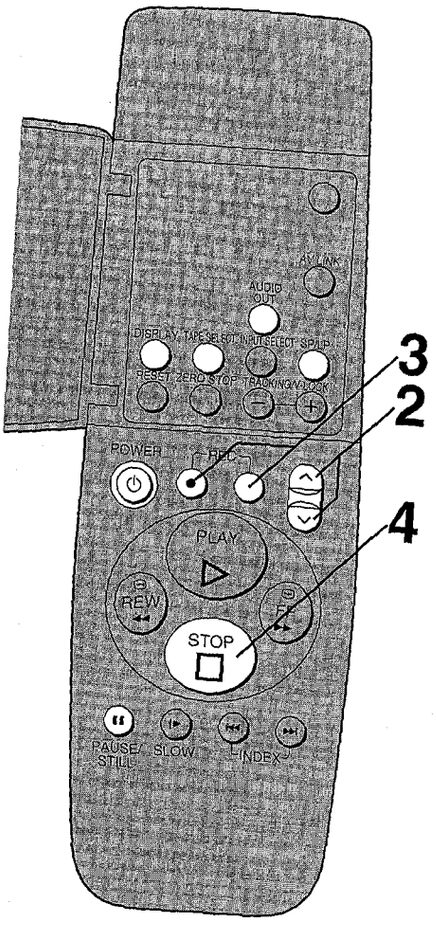
- When a recording is started by pressing **REC**.
- When **REC** is pressed during recording.
- When timer recording is activated.

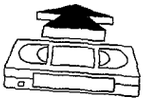
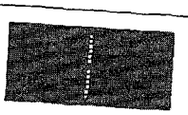
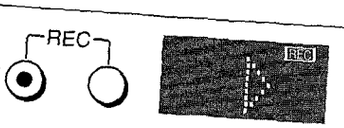
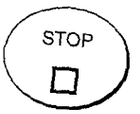
Note:

- During Playback, set **PAL/MESECAM**.
  - PAL. When playing back a tape recorded in the PAL system
  - MESECAM: When playing back a tape recorded in the MESECAM system
    MESECAM Indicator lights up.
- Audio reproduction of linear (conventionally recorded) tapes will be monaural when played back on the FM Hi-Fi video recorders.
- Cue or review playback will be automatically released after 10 minutes, and still or slow playback after 5 minutes.
- The index search function can only work correctly, if the index signals are spaced at least 3 minutes apart in the SP mode and 5 minutes apart in the LP mode.

On-the-spot Recording





Operations	Display Symbols	
1		Insert a cassette tape. •*If it has already been inserted, press* **POWER** *to turn the VTR on.*
2		Select TV station.
3		Start recording.
4		Stop recording.

To select the Desired Tape Speed

Press **SP/LP** before recording.

To interrupt Recording

Press **PAUSE/STILL** during recording.
Press again to continue recording.

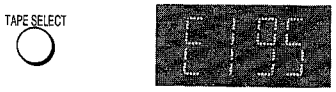
To record One TV Programme while Viewing Another Programme

1 Refer to the on-the-spot recording operations steps **1** to **3**.

2 Select the TV programme on your TV set you wish to view at the present time.

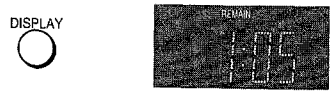
To display the Approximate Remaining Tape Time

1 Press **TAPE SELECT** to select the corresponding cassette tape length.



E195: For E30, -60, -90, -120, -180 and -195 tapes
E240: For E240 tape
E260: For E260 and -300 tapes

2 Press **DISPLAY**



→Clock→Counter→**Remaining Tape Time**→

- The remaining tape time may not be displayed correctly depending on the tape used.

Recording of Stereo and Bilingual Programmes

1 Recordings are automatically made in the stereo or bilingual mode. This prevents errors in the selection of the dubbed or the original language.

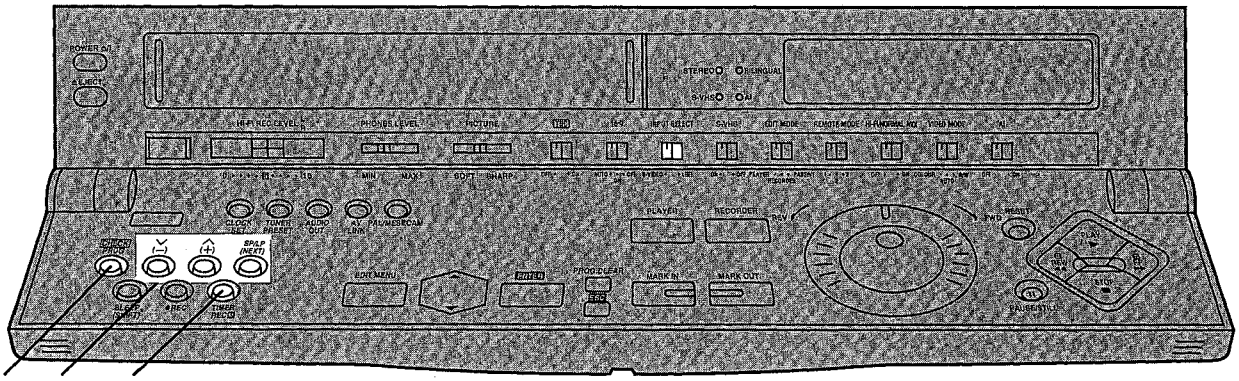
2 During playback press **AUDIO OUT** to select the desired language. See page 40.

- This VTR does not support NICAM broadcast audio multiplexing.

Notes:

- When a video cassette with a broken off tab is inserted, the "📼" indication will flash to indicate that recording is not possible.
- The recording pause mode will be automatically released after 5 minutes, and be back to the stop mode.

Timer Recording



1 2 3

Up to 8 timer programmes can be recorded up to one month in advance by setting the timer, including daily and weekly programmes.

Preparation

Insert a cassette tape with an intact erasure prevention tab.

For Example:

Timer programme number;	1
Programme position (channel);	2
Date;	27th, October
Starting time;	20:02
Ending time;	21:30
(present date;	16th October)

Operations		Display Symbols	
1	CHECK PROG	PROG 1	Select **Timer programme number** "1".
2	Set each item by pressing ∧ (+) or ∨ (−) and **SP/LP (NEXT)**.		
		2	Set **Programme position** (channel) "2".
	(−) (+)	27 10	Set **Date** "27". ●For daily and weekly recording, see next page.
		ON 20 15	Set **Starting time** (hour) "20".
	↓	ON 20 02	Set **Starting time** (minute) "02".
		OFF 21 02	Set **Ending time** (hour) "21".
	SP/LP (NEXT)	OFF 21 30	Set **Ending time** (minute) "30". ●There is no need to press **SP/LP (NEXT)**.
3	TIMER REC		To activate timer recording, press **TIMER REC**.

Setting for Daily and Weekly Timer Recording

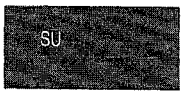
In the Date setting step, press ∨ (−) repeatedly until the desired day (days) is displayed.

Daily recording
From Sunday to Saturday

From Monday to Saturday

From Monday to Friday

Weekly recording
For example, Sunday



Timer Recording from External Signal Source

If Timer Recording is performed by a unit connected to the AV1/AV2 Socket or the Audio/Video/S-Video input sockets, select the A1, A2 or A3 indicator for the programme position.

A1 Through the AV1 socket
A2: Through the AV2 socket
A3: Through the AV3 sockets on front panel
Set **INPUT SELECT** on the VTR.
S-VIDEO: Through the S-VIDEO IN and AUDIO IN sockets
LINE: Through the VIDEO IN and AUDIO IN sockets

Selecting the Desired Tape Speed

After step **2**, press **SP/LP (NEXT)** and select SP or LP by pressing ∧ (+) or ∨ (−).

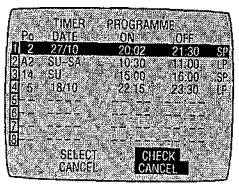
Setting other Programmes in Succession

Repeat steps **1** and **2**.

Checking a Timer Programme

Select the timer programme number to be checked by pressing **CHECK/PROG**.

On Screen Display

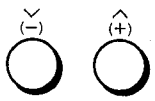


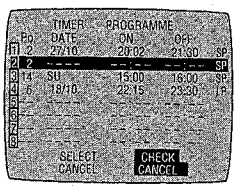
Cancelling a Timer Programme

1 Press **TIMER REC** to turn off the timer recording function.

2 Select the timer programme number to be canceled by pressing **CHECK/PROG**.

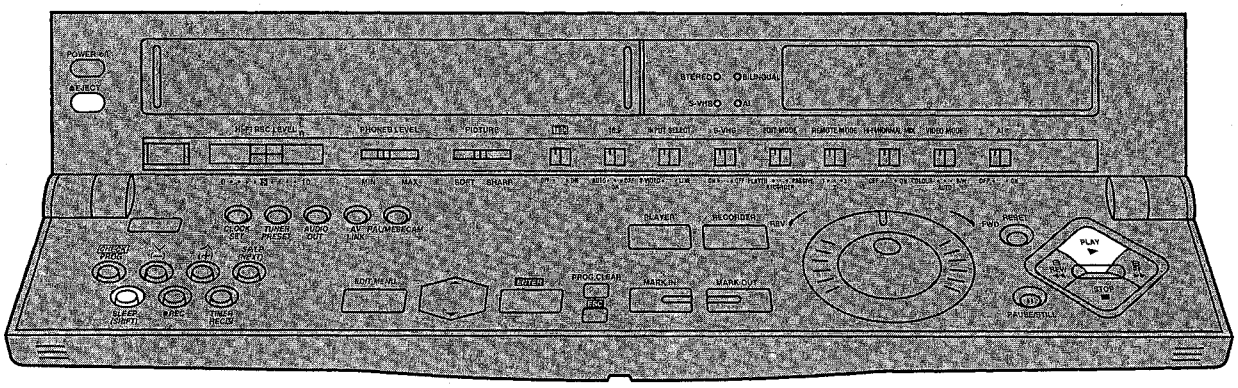
3 Press ∧ (+) and ∨ (−) simultaneously for more than 3 seconds.





Note:
If a timer recording is not performed to the end (due to insufficient tape or cancellation by the user), the programmed timer recording data will be cancelled from the memory by 4 a.m. two days later.
However, if the Timer Record Function is activated at that time, the programmed timer recording data will be cancelled at 4 a.m. the next day.

Other Functions



Automatic VTR Off Time Setting

Press **SLEEP** for the desired time.

- Each press gives a 30 minutes time span up to 9 hours.
- To cancel the setting time, press **SLEEP** repeatedly to set 0:00.

NTSC Playback

Tapes recorded in the NTSC system can be played back with this VTR via a PAL system TV set.

- The playback picture may roll up or down. If the TV set is equipped with a V-HOLD control, it may be possible to stop the picture movement by adjusting this control.
- Depending on the TV set used, the picture may be in black and white. However, this is not an indication of a malfunction.

Other Automatic Functions

Automatic Playback

When a cassette without an erasure prevention tab is inserted, the VTR starts playback automatically.

VTR-off Playback

When the VTR is off, an inserted cassette can be played back by pressing **PLAY**

Automatic Rewinding

When the tape reaches its end during recording (except for timer recording) or playback, it will automatically be rewound to the beginning.

Automatic Switching Off and Ejection

When the VTR is switched off, an inserted cassette can be ejected simply by pressing **EJECT** The VTR will eject the cassette and automatically turn itself off again.

Editing Preparation

This VTR is equipped with programme editing functionality. If connected via edit cable to another VTR, it is possible to control such functions as tape playback and editing.

Connections

See the connection diagram on page 5.

Connecting This VTR with Another Identical One

- Connect the two VTRs with an edit cable.
- Connect the recording VTR to the TV
- Connect the AV1 socket on the playback VTR to the AV2 socket on the recording VTR.
- Select A2 by pressing ∧ ∨ on the recording VTR.
- Set **EDIT MODE** to PASSIVE on the playback VTR, and to RECORDER on the recording VTR.
- Control is performed by the recording VTR.

Using This VTR as the Recording VTR

- Connect this VTR to the playback unit with an edit cable.
- Connect the AV1 socket on this VTR to the TV
- Connect the AV2 socket or the AUDIO/VIDEO/S-VIDEO IN (AV3) sockets on this VTR to the playback unit.
- Select A2 or A3 by pressing ∧ ∨ on this VTR.
  - A2: Through the AV2 socket
  - A3: Through the AV3 sockets on front panel
    Set **INPUT SELECT** on this VTR.
    - S-VIDEO: Through the S-VIDEO IN and AUDIO IN sockets
    - LINE: Through the VIDEO IN and AUDIO IN sockets
- Set **EDIT MODE** on this VTR to RECORDER.
- Control is performed by this VTR.

Using This VTR as the Playback VTR

- Connect this VTR to the recording unit with an edit cable.
- Connect the AV1 socket on this VTR to the TV
- Connect the AV2 socket on this VTR to the recording unit.
- Select A2 by pressing ∧ ∨ on this VTR.
- Set the input switch on the recording unit to AV
- Set **EDIT MODE** on this VTR to PLAYER.
- Control is performed by this VTR.

Notes:

- During editing operations, operate using this VTR; do not operate the other unit.
- When this VTR is used as the playback VTR, it may not be possible to perform editing operations properly depending on the type of the recording VTR. In such a case, use this VTR as the recording VTR.
- When a movie camera is connected, operating this VTR will not facilitate reverse playback or reverse slow playback on the movie camera.
- When **EDIT MODE** on this VTR is set to PASSIVE, operation will not be possible, and the On Screen Display will not appear.
- When making a connection using an edit cable, disconnection of the AC mains lead on this VTR may result in erroneous display patterns on the other unit.
- When operating the Jog Dial and Shuttle Ring, it is only possible to reset the tape counter of the other unit during still playback.
- The supplied edit cable cannot be used to connect two other VTRs with edit sockets.
- The On Screen Display does not appear when no input signals are supplied from another unit or when a non-recorded cassette is played.
- The On Screen Display may appear distorted if the picture is affected by noise.

Editing Functions

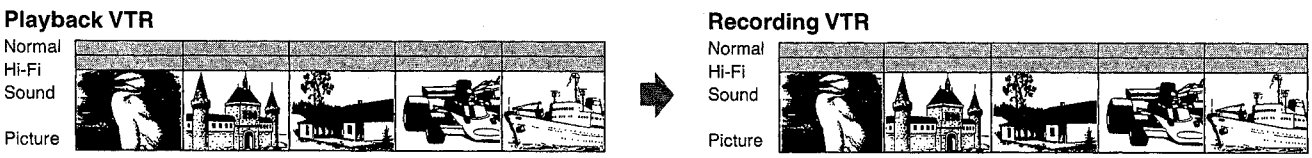
Using this VTR, 4 types of manual editing and 4 types of programme editing can be selected.
In programme editing, after programming up to 10 scenes for each type (50 scenes for Assemble Editing), editing can be performed automatically.

Manual Editing
- Copying
- Insert Editing
- AV Insert Editing
- Audio Dubbing

Programme Editing
- Assemble Editing
- Insert Editing
- AV Insert Editing
- Audio Dubbing

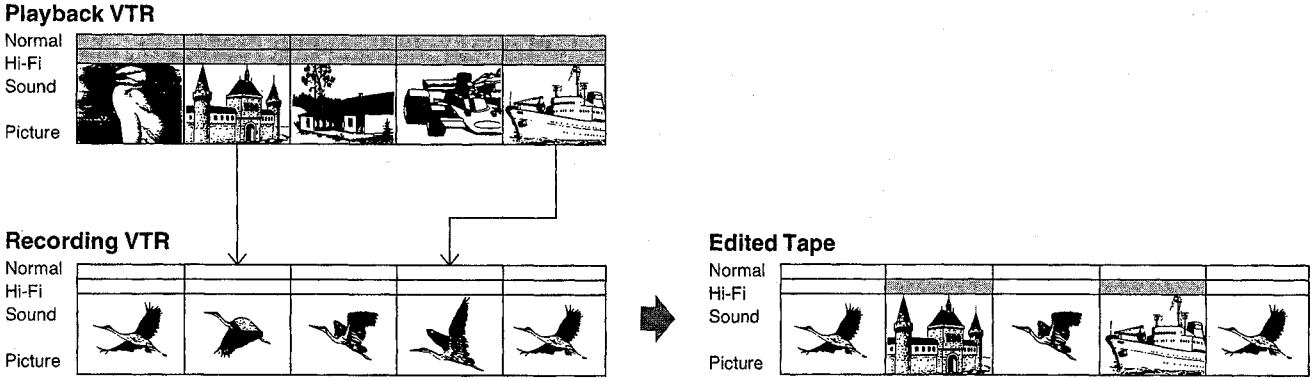
Copying

Allows the re-recording (copying) of the picture and sound from one tape onto another tape.



Insert Editing

Allows the partial replacement of the picture and Hi-Fi sound on a recorded tape. Normal sound is left in its original state.



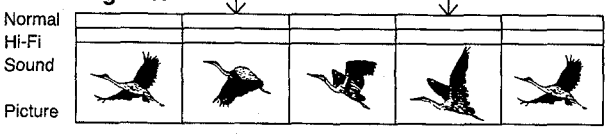
- To hear the original sound, select the normal sound track by pressing **AUDIO OUT**
- To hear the new sound and original sound mixed together, set **Hi-Fi/NORMAL MIX** to ON.

AV Insert Editing

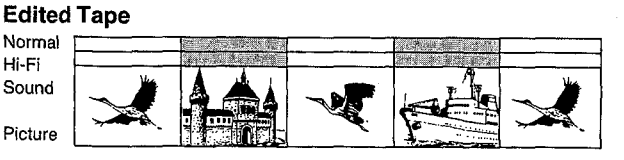
Allows the partial replacement of the picture and both the Hi-Fi and normal sound on a recorded tape.

Playback VTR

Recording VTR



Edited Tape



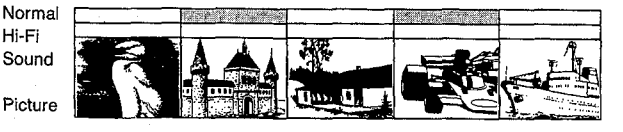
Audio Dubbing

Allows the partial replacement of the normal sound on a recorded tape. Hi-Fi sound is left in its original state.

Playback VTR

Recording VTR

Edited Tape



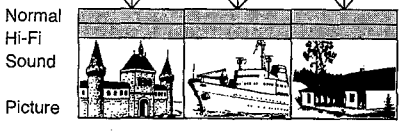
- To hear the new sound, select the normal sound track by pressing **AUDIO OUT**
- To hear the new sound and original sound mixed together, set **Hi-Fi/NORMAL MIX** to ON.

Assemble Editing

Allows the required scenes (picture and sound) to be picked up from one or more recorded tapes and recorded in any desired order onto another tape.

Playback VTR

Recording VTR

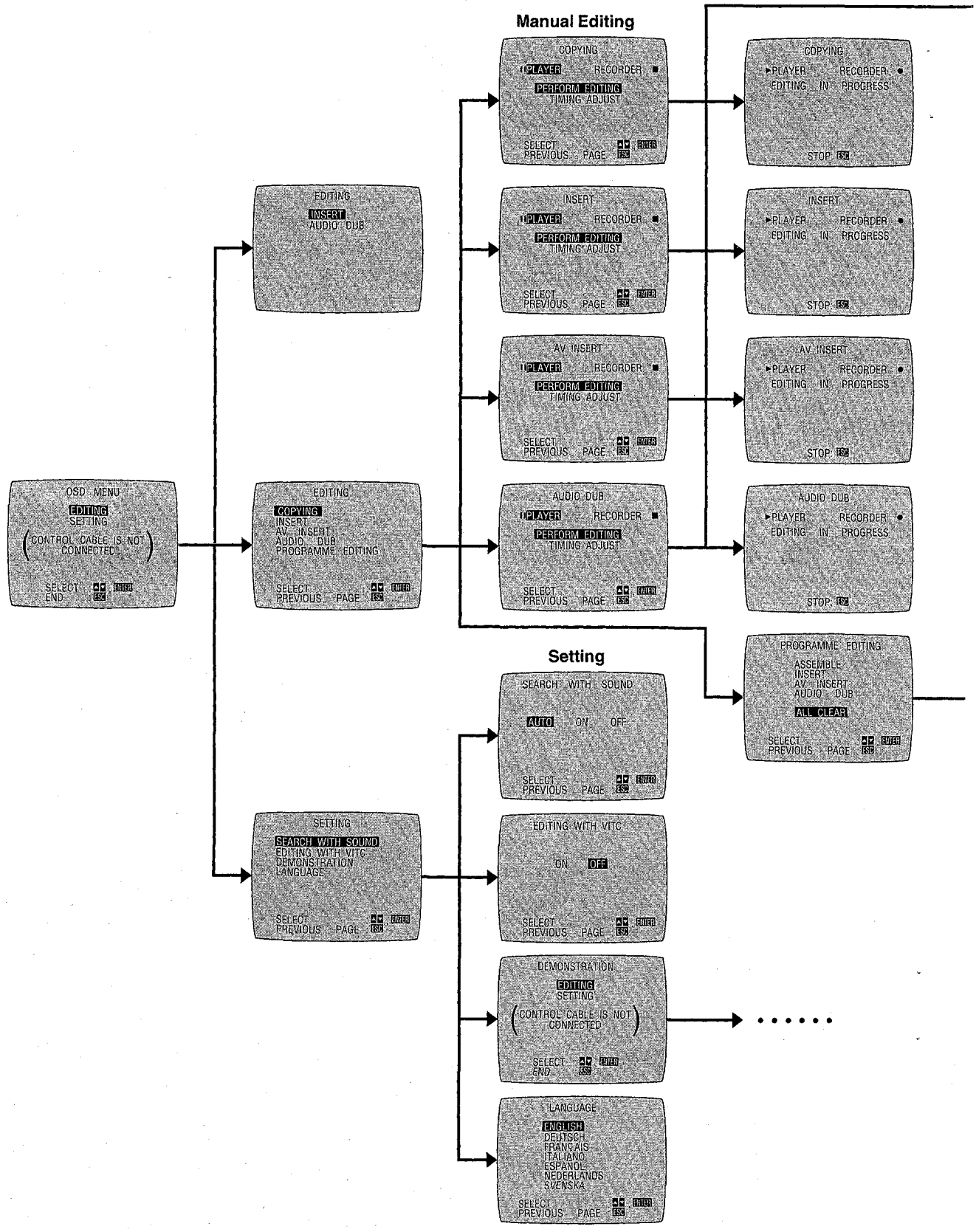


VITC Editing

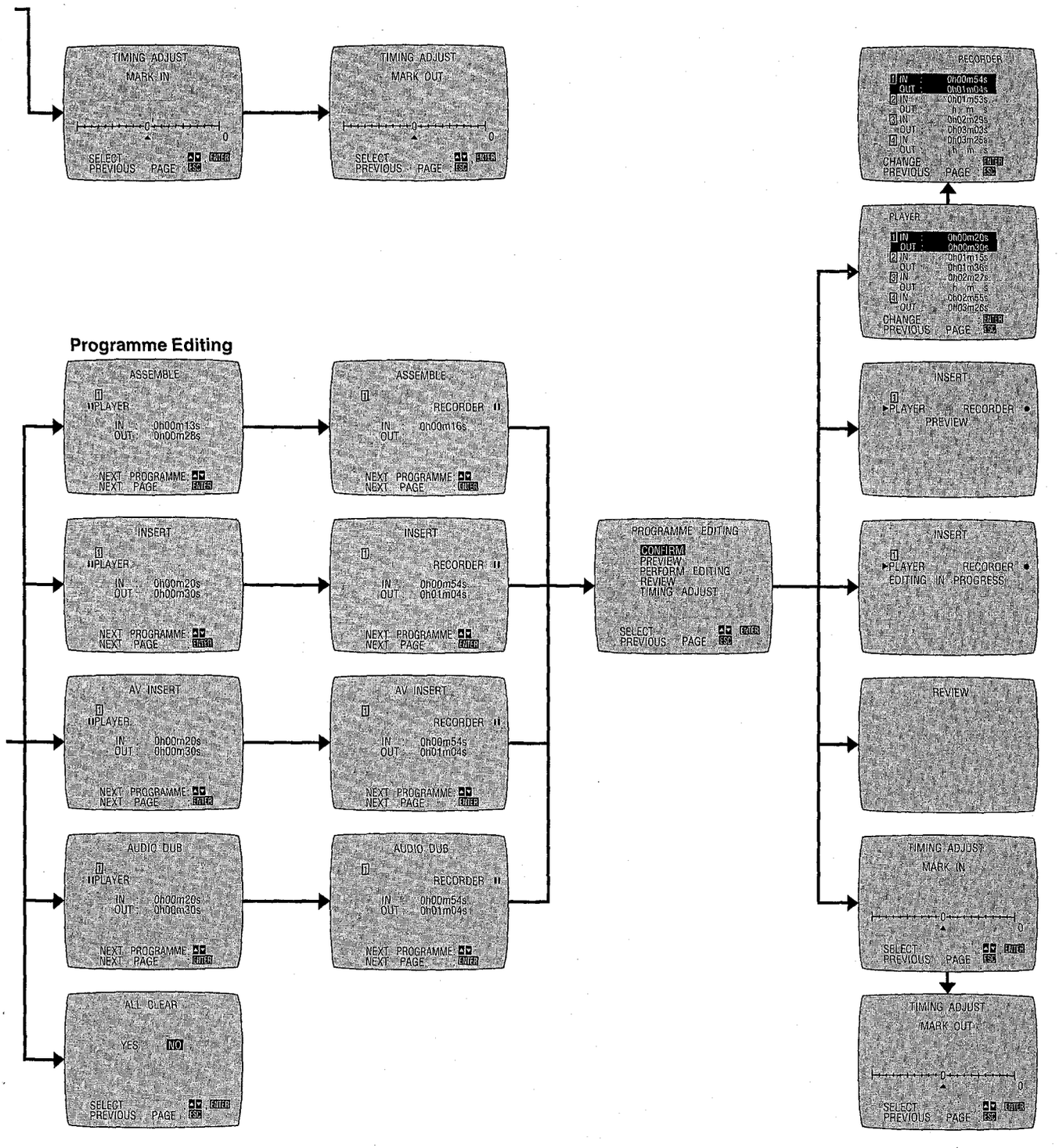
The AG-4700 is able to read or write VITC (Vertical Interval Time Code). See page 13.

- VITC enables picture-precise editing.
- The VITC can also be read during pause and slow-motion.
- Editing using the VITC function cannot be performed with movie cameras which have edit sockets (5-pin).
- The editing accuracy when using the VITC function is approximately ±3 frames. This accuracy decreases to approximately ±8 frames when record and pause are repeated.

Flow Chart for On Screen Displays

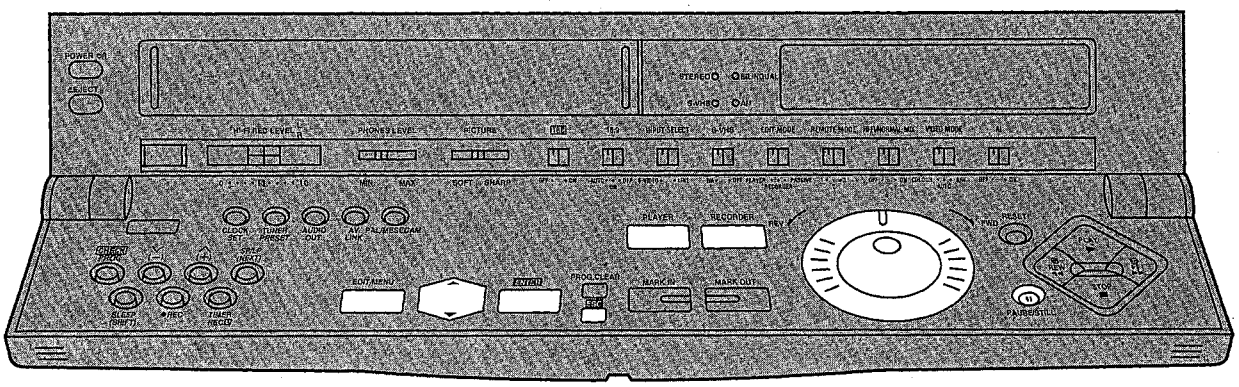


Programme Editing



Caution:
With VITC function, the time code is displayed on the screen in increments of hours, minutes, seconds and frames (25 frames per second).
The normal counter also switches to time code display.

Manual Editing



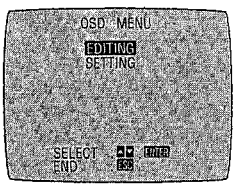
Copying

Preparation

- Make the necessary connections. See page 21
- Insert a recorded cassette into the playback VTR, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

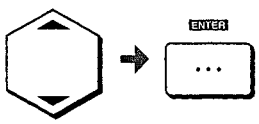
Operations — On Screen Display

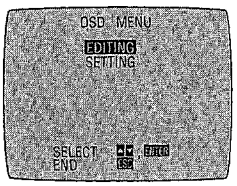
1



Press **EDIT MENU**.

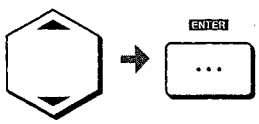
2

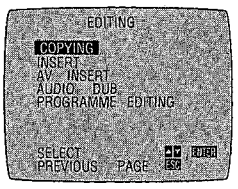




Select **EDITING**.

3

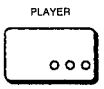


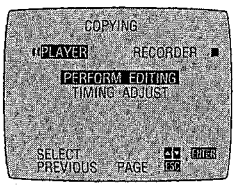


Select **COPYING**.

- If the playback VTR receives no input signals, the On Screen Display may disappear
  In such a case, follow the next step and then the On Screen Display will appear.

4



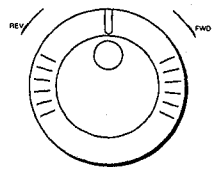


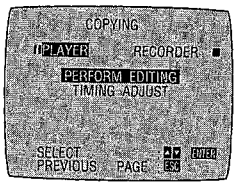
Press **PLAYER** and **PAUSE/STILL**.

- The picture from the playback VTR appears on the screen.

Operations **On Screen Display**

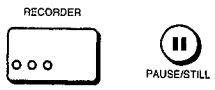
5

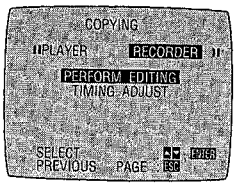




Search for the edit start point on the playback VTR.

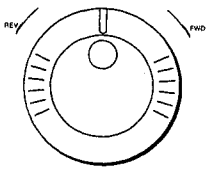
6

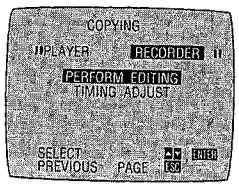




Press **RECORDER** and **PAUSE/STILL**.
- The picture from the recording VTR appears on the screen.
- Steps **6** and **7** need not be performed when a non-recorded cassette is used.

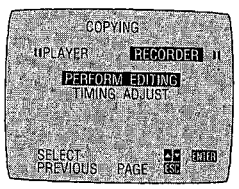
7





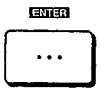
Search for the edit start point on the recording VTR.

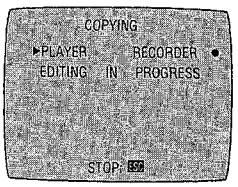
8



Select **PERFORM EDITING**.

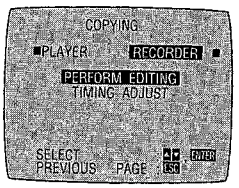
9





Press **ENTER**.
- Editing begins.

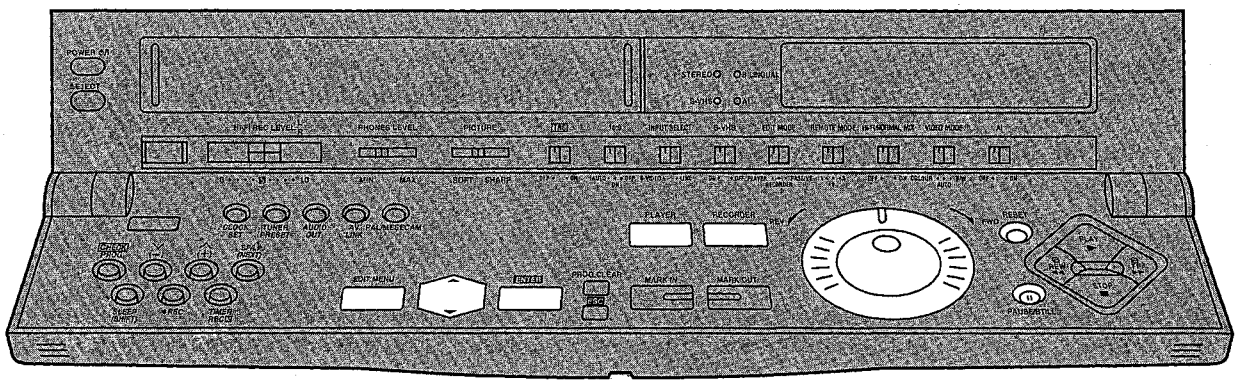
10



Press **ESC** to stop editing.

11

Press **EDIT MENU**.
- The On Screen Display disappears.

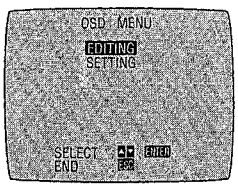
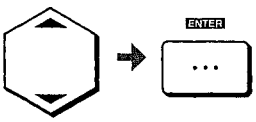
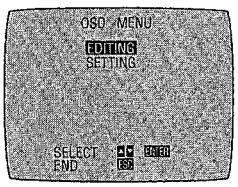
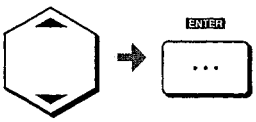
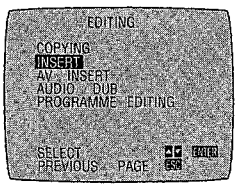
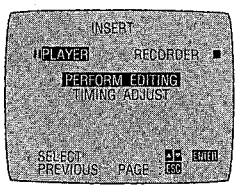


Insert, AV Insert Editing and Audio Dubbing

Example: Insert Editing
AV Insert Editing and Audio Dubbing are also performed using the same procedure.

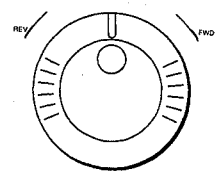
Preparation

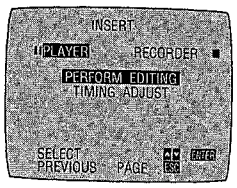
- Make the necessary connections. See page 21
- Insert a recorded cassette into the playback VTR, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

Operations	On Screen Display	
1		Press **EDIT MENU**.
2 		Select **EDITING**.
3 		Select **INSERT**. • If the playback VTR receives no input signals, the On Screen Display may disappear. In such a case, follow the next step and then the On Screen Display will appear.
4		Press **PLAYER** and **PAUSE/STILL**. • The picture from the playback VTR appears on the screen.

Operations **On Screen Display**

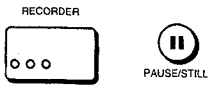
5

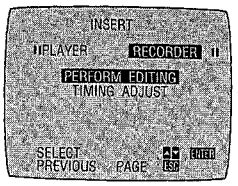




Search for the edit start point on the playback VTR.

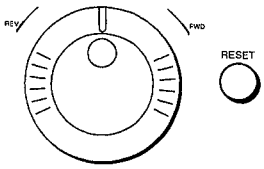
6

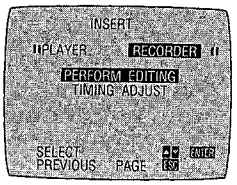




Press **RECORDER** and **PAUSE/STILL**.
- The picture from the recording VTR appears on the screen.

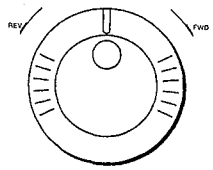
7

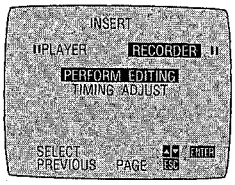




Search for the edit end point on the recording VTR and press **RESET**.

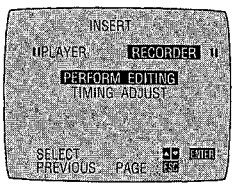
8





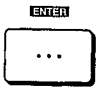
Search for the edit start point on the recording VTR.

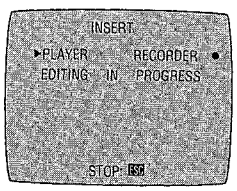
9



Select **PERFORM EDITING**.

10





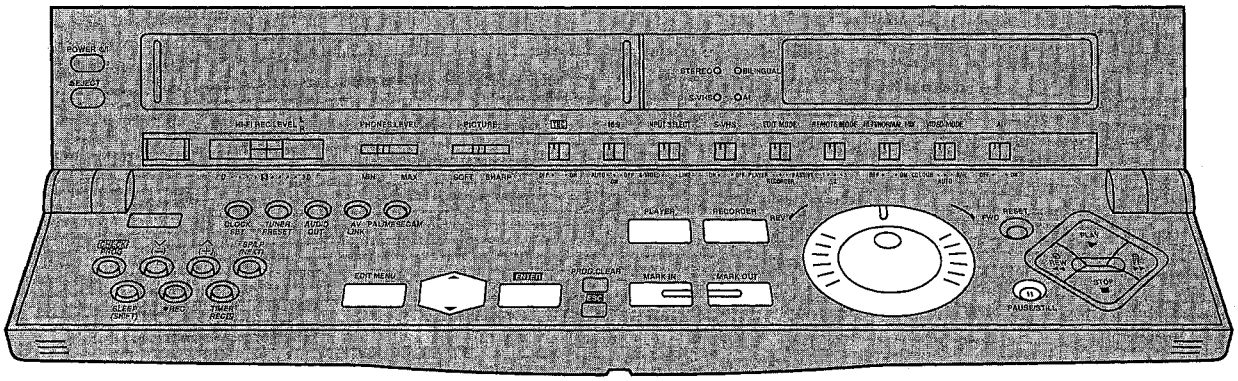
Press **ENTER**.
- Editing begins.
- Editing will finish when the counter reaches 0:00.00.

11

Press **EDIT MENU**.
- The On Screen Display disappears.

Note:
If the VITC function is activated, **RESET** is not operative. In such a case, turn off the VITC function.

Programme Editing

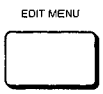
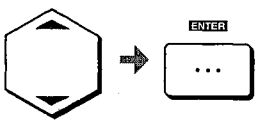
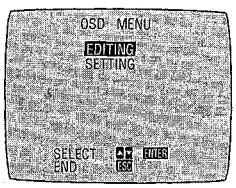
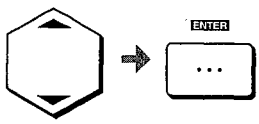
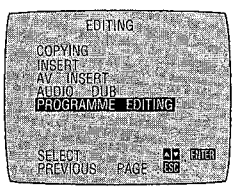
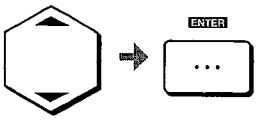
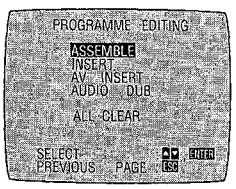
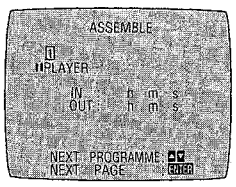


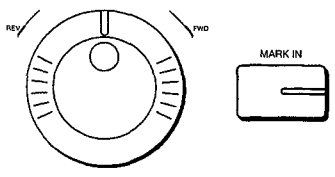
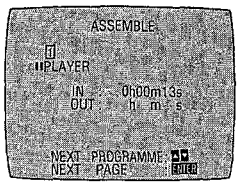
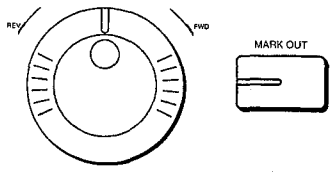
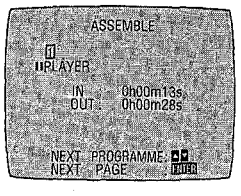
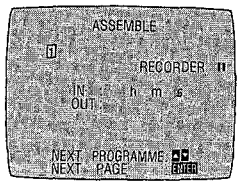
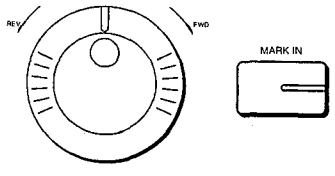
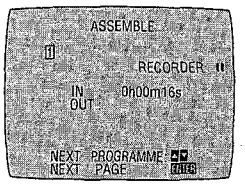
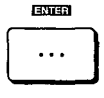
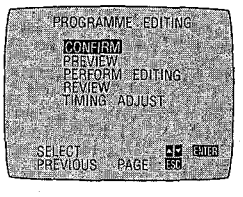
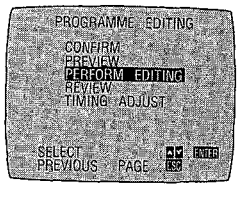
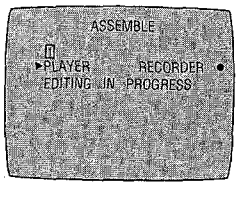
Assemble Editing

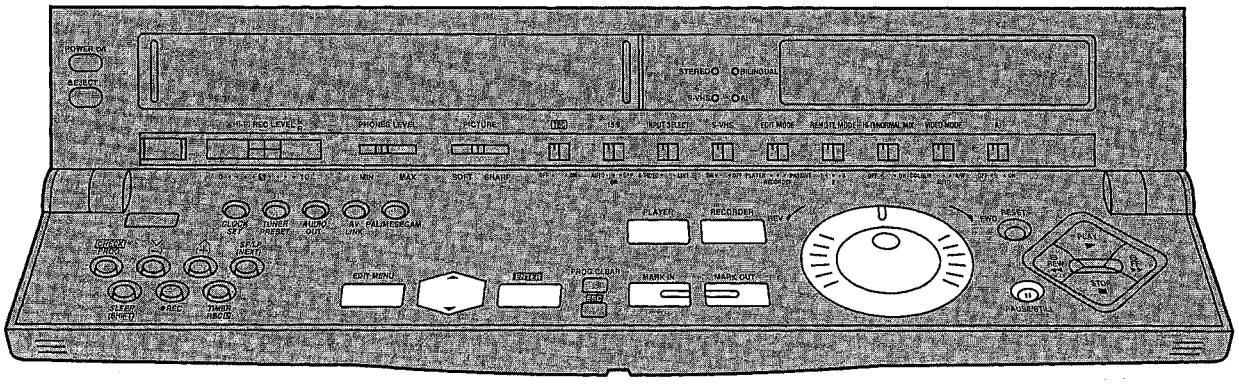
By setting the edit start point and end point on the playback VTR, along with the edit start point on the recording VTR, assemble editing of up to 10 scenes can be performed automatically.

Preparation

- Make the necessary connections. See page 21
- Insert a recorded cassette into the playback VTR, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

Operations	On Screen Display	
1 		Press **EDIT MENU**.
2 		Select **EDITING**.
3 		Select **PROGRAMME EDITING**.
4 		Select **ASSEMBLE**. • If the playback VTR receives no input signals, the On Screen Display may disappear In such a case, follow the next step and then the On Screen Display will appear.
5		Press **PLAYER** and **PAUSE/STILL**. • The picture from the playback VTR appears on the screen.

Operations	On Screen Display	
6 		Search for the edit start point on the playback VTR and press **MARK IN**.
7 		Search for the edit end point on the playback VTR and press **MARK OUT**. •If there is more than one programme, select a programme number using ▼ and ▲, and repeat steps **6** and **7**
8		Press **RECORDER** and **PAUSE/STILL**. •The picture from the recording VTR appears on the screen.
9 		Search for the edit start point on the recording VTR and press **MARK IN**. •Step **9** need not be performed when a non-recorded cassette is used.
10 		Press **ENTER**. •The edit start point and the edit end point are memorized.
11		Select **PERFORM EDITING**.
12		Press **ENTER**. •Editing begins. •After editing of all programmes is completed, the both VTRs stop in still playback mode.



Insert, AV Insert Editing and Audio Dubbing

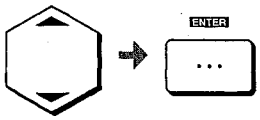
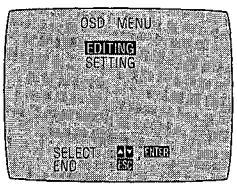
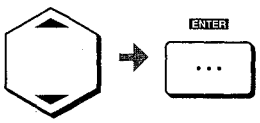
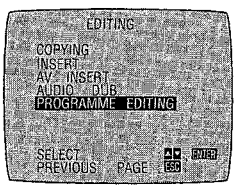
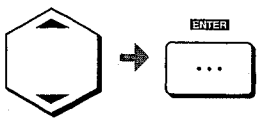
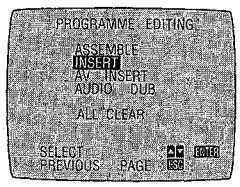
There are 2 types of programme.
To insert only a particular portion:
Set the edit start point and end point on the playback VTR, and the edit start point on the recording VTR.
To insert within fixed limits:
Set the edit start point on the playback VTR, and the edit start and end point on the recording VTR.

- If four points are set, insertion will end when the first end point is reached.

Example: Insert Editing
AV Insert Editing and Audio Dubbing are also performed using the same procedure.

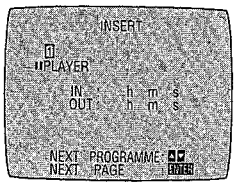
Preparation

- Make the necessary connections. See page 21
- Insert a recorded cassette into the playback VTR, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

Operations	On Screen Display	
1		Press **EDIT MENU**.
2 		Select **EDITING**.
3 		Select **PROGRAMME EDITING**.
4 		Select **INSERT**. • If the playback VTR receives no input signals, the On Screen Display may disappear In such a case, follow the next step and then the On Screen Display will appear.

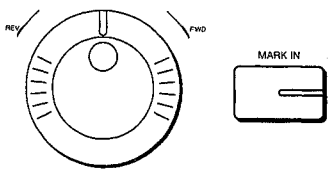
Operations **On Screen Display**

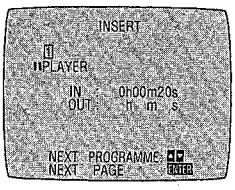
5



Press **PLAYER** and **PAUSE/STILL**.
- The picture from the playback VTR appears on the screen.

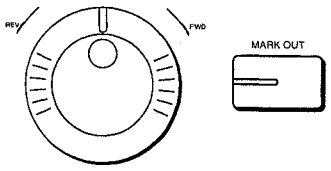
6

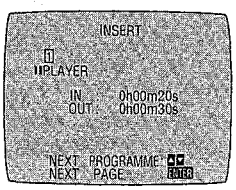




Search for the edit start point on the playback VTR and press **MARK IN**.

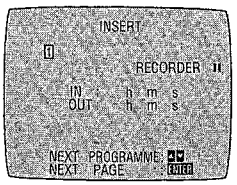
7





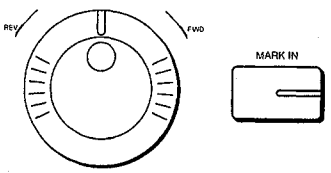
Search for the edit end point on the playback VTR and press **MARK OUT**.
- This step is not necessary if the end point on the recording VTR has been set.

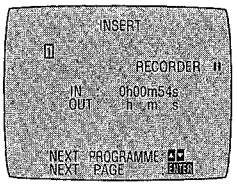
8



Press **RECORDER** and **PAUSE/STILL**.
- The picture from the recording VTR appears on the screen.

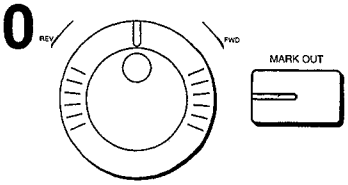
9

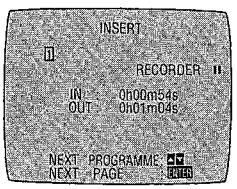




Search for the edit start point on the recording VTR and press **MARK IN**.

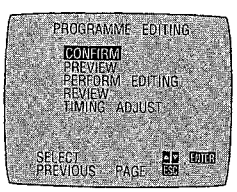
10





Search for the edit end point on the recording VTR and press **MARK OUT**.
- This step is not necessary if the end point on the playback VTR has been set.
- If there is more than one programme, select a programme number using ▼ and ▲, and repeat steps **5** to **10**.

11

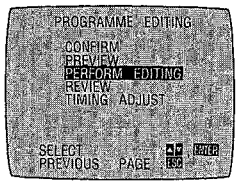


Press **ENTER**.
- The edit start point and the edit end point are memorized.

Operations

On Screen Display

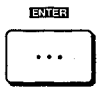
12

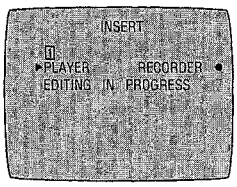


Select **PERFORM EDITING**.

- If a programme is not correct, it will appear on the screen. Set the edit start and end points correctly.
- To see a preview before performing editing, select **PREVIEW** See page 36.

13





Press **ENTER**.

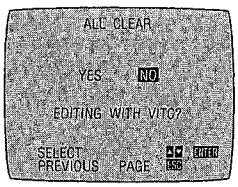
- Editing begins.
- After editing of all programmes is completed, the both VTRs stop in still playback mode.

Notes for Programme Editing:

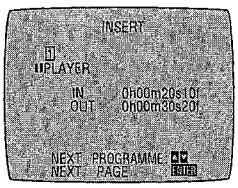
- For the edit start point, use a location which is at least 10 seconds from the beginning of the tape. Otherwise, the programme will not be executed.
- Programme editing can be suspended in mid-execution by pressing **ESC**. As a result, however, the picture immediately after suspending may disappear
- Programmes are stored even after editing is completed. Unless they are cancelled, programmes are stored even after the power has been turned off.
- Programme editing can not be performed with a movie camera that has a 4-digit counter.

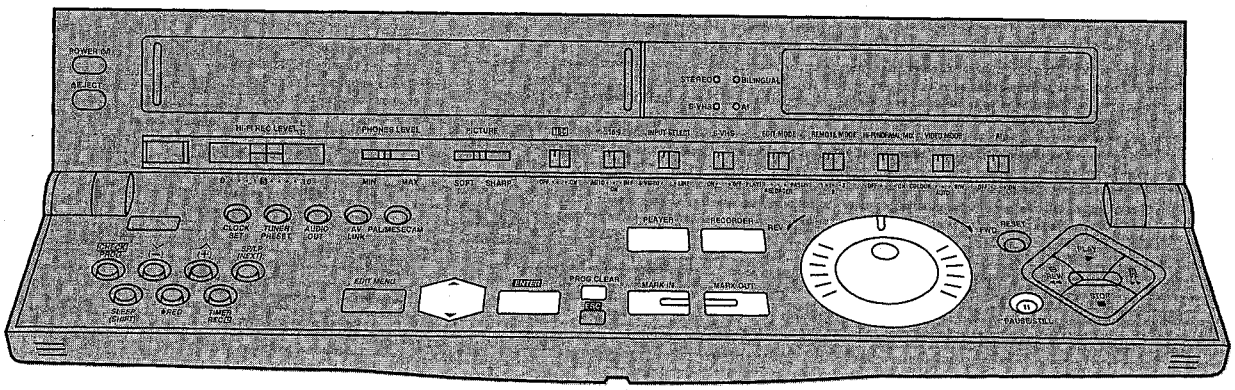
When the VITC function is on:

- If the programme on the normal counter has been stored, the On Screen Display shown below may appear after step **4**.
  If editing is to be performed using the VITC function, select **YES** to cancel all the editing programmes.
  (When the VITC function is off, the On Screen Display shown below will appear if the programme with the time code has been stored.)



- When **MARK IN** or **MARK OUT** is pressed, the time code is displayed on the screen in increments of hours, minutes, seconds and frames (25 frames per second).

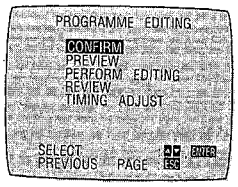




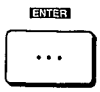
Other Editing Functions

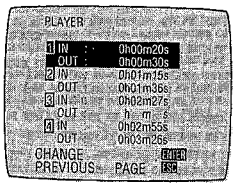
To confirm and Change Editing Programmes

1 Select **CONFIRM** after setting the edit start and end points.

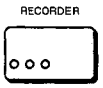


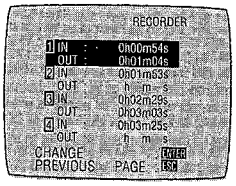
2 Press **ENTER**.
- The programme list for the playback VTR is displayed.



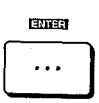


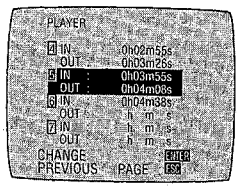
3 Press **RECORDER** to confirm the programmes on the recording VTR.
- Press **PLAYER** to return to the programme list on the playback VTR.



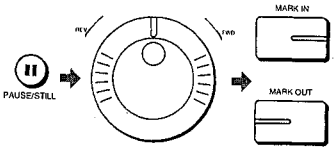


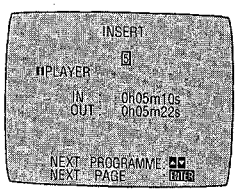
4 Select the programme to be changed.





5 Search for the start or end point to be changed and press **MARK IN** or **MARK OUT**

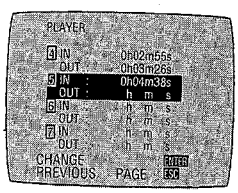


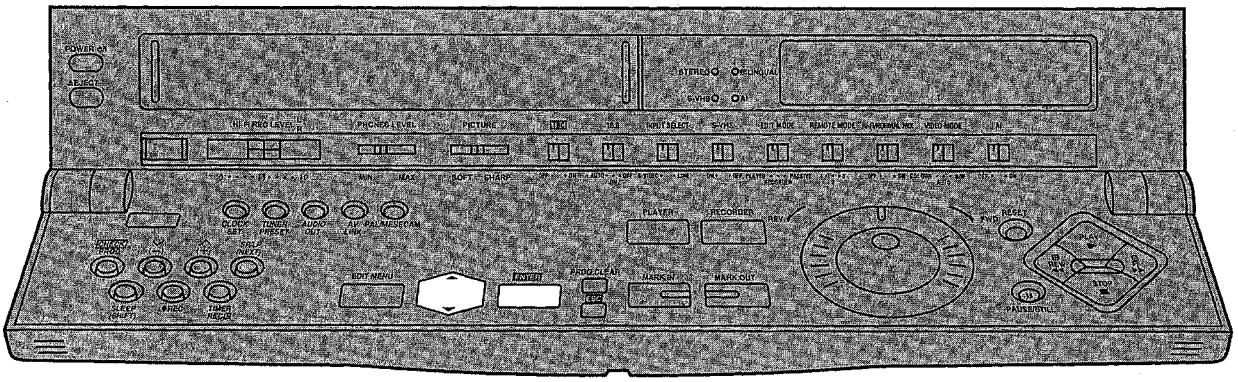


6 Press **ENTER**.

To cancel an Editing Programme

In step **4** above, select the programme to be canceled and press **PROG. CLEAR**.

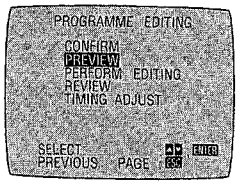




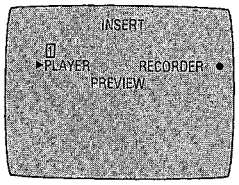
Preview Function

Before performing actual editing, this function allows confirmation of editing operations without recording.

1 Select **PREVIEW** after setting the edit start and end points.



2 Press **ENTER**.
- Preview begins.

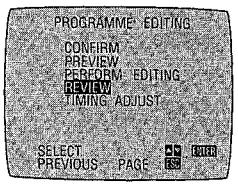


Notes:
- Preview function works only when this VTR is used as the recording VTR.
- Preview function does not work during assemble editing.

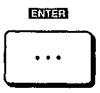
Review Function

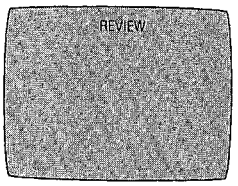
After editing has been completed, this function plays back from the edit start point to the edit end point on the recording VTR.

1 Select **REVIEW** after performing editing.



2 Press **ENTER**.
- Review begins.





Edit Timing Adjustment

When performing editing in conjunction with a unit which has a different mechanism, there may be a lag in the edit start point due to a deviation between the time a pause cancellation signal is received by the recording unit and the time recording actually begins.
Edit Timing Adjustment is used to compensate the edit start and end time in light of this start-up time deviation.

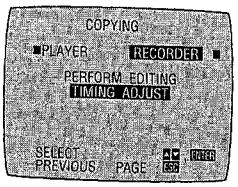
1 Record the second hand on a stopwatch with a movie camera.

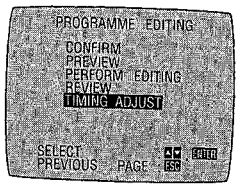
2 Insert this recorded cassette into the playback unit, and a cassette with an intact erasure prevention tab into the recording VTR.

3 Using the point where the second hand reaches zero as the edit start point, perform copying.

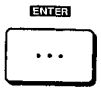
4 Play back the copied tape, and check how many seconds had elapsed at the recording start point.
- If timing is correct, recording should begin at exactly zero seconds.

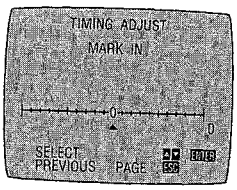
5 Select **TIMING ADJUST** from the screen below.



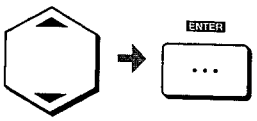


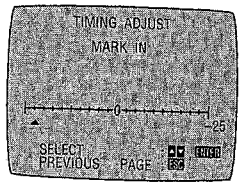
6 Press **ENTER**.



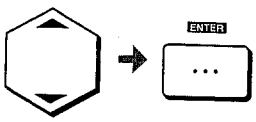


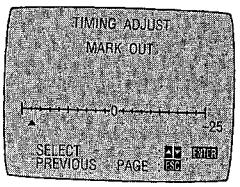
7 Adjust the timing for the start point by setting the amount of the discrepancy of the second hand.
- The setting is displayed in frame (1/25 of a second) units. Thus if, for example, one second had elapsed, set to −25.
- Corrections can be made in the range of ±30 frames (1.2 second).





8 Adjust the timing for the end point in the same manner.

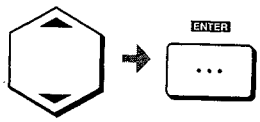


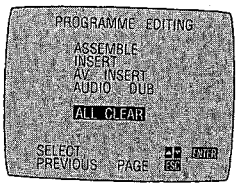


Note:
Edit timing adjustment function only works during programme editing.

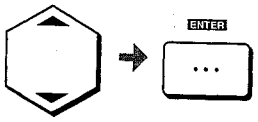
To cancel All Editing Programmes

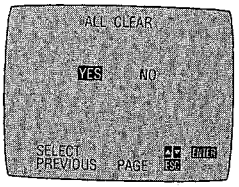
1 Select **ALL CLEAR** from the screen below.





2 Select **YES**.
- All programmes will be canceled.





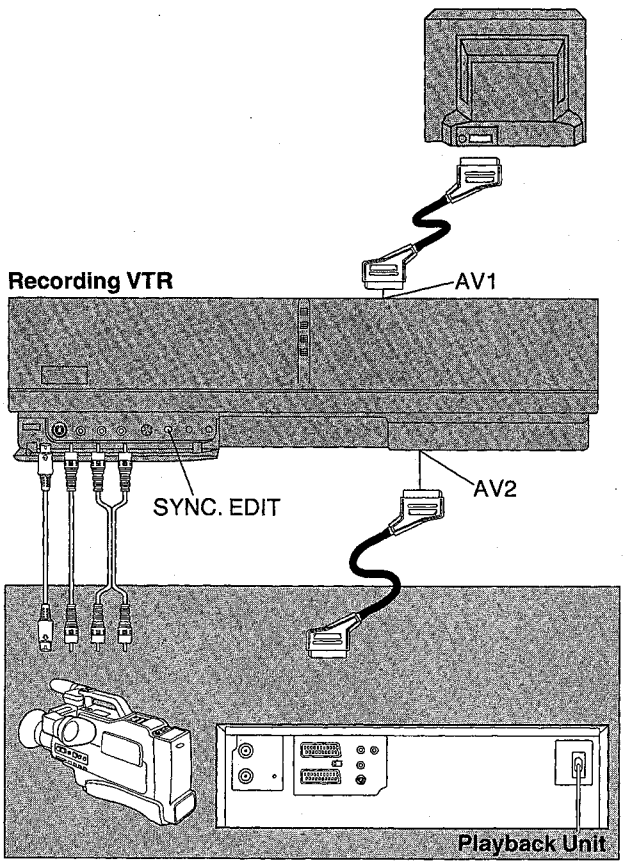
Editing when not Using an Edit Cable

To connect a VTR or Movie Camera without an Edit Socket and use This VTR as the Recording VTR

- Connect the AV1 socket on this VTR to the TV
- Connect the AV2 socket or the AUDIO/VIDEO/S-VIDEO IN (AV3) sockets on this VTR to the playback unit.
- Select A2 or A3 by pressing ∧ ∨ on this VTR.
  - A2: Through the AV2 socket
  - A3: Through the AV3 sockets on front panel
    Set **INPUT SELECT** on this VTR.
    - S-VIDEO: Through the S-VIDEO IN and AUDIO IN sockets
    - LINE: Through the VIDEO IN and AUDIO IN sockets
- Set **EDIT MODE** on this VTR to RECORDER.
- Control is performed by the respective units.

Preparation

- Make the necessary connections.
- Insert a recorded cassette into the playback unit, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

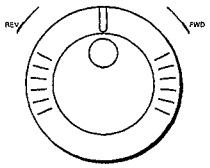


Assembly Editing

Operations

1 Press **PAUSE/STILL** on the recording VTR.

2 Search for the end of the previous recording.



3 Press **REC** to set for the new recording.

4 Start playback on the playback unit.

5 Press **PAUSE/STILL** again to start the new recording.

6 Press **STOP** to stop recording.

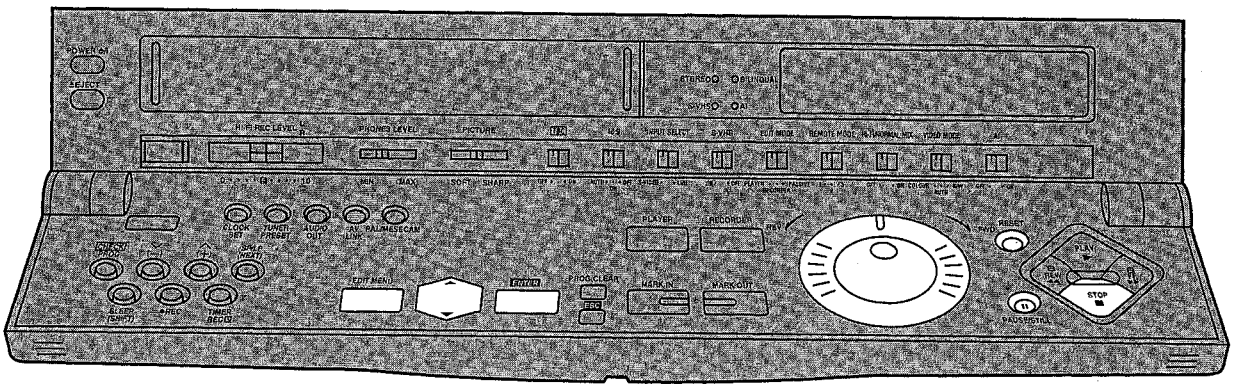
Synchronized Editing

By connecting a VTR or movie camera with synchronized editing capability to this VTR using a synchro connection cord (optional), it is possible to synchronize the playback start and stop of the playback unit with the recording start and stop of this VTR.

1 Put the recording VTR into the recording pause mode by pressing **REC** and **PAUSE/STILL**.

2 Put the playback unit into the still playback mode at the point where editing is to begin.

3 Press **PAUSE/STILL** on the recording VTR.
- The playback unit switches over to the playback mode, and copying begins automatically.



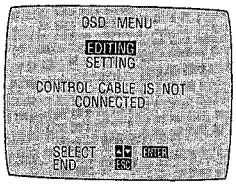
Insert Editing, AV Insert Editing and Audio Dubbing

Operations **On Screen Display**

1 EDIT MENU

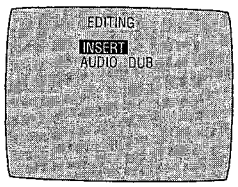
Press **EDIT MENU**.

2 ENTER



Select **EDITING**.

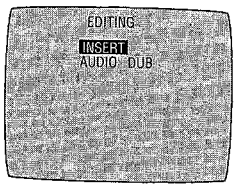
3 REV FWD RESET PAUSE/STILL



Press **PAUSE/STILL** and search for the edit end point, and press **RESET**.

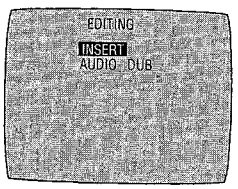
- It is not required for audio dubbing to search for the edit end point and reset.

4 REV FWD



Search for the edit start point.

5 ENTER



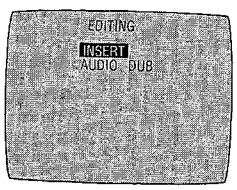
Select **INSERT** or **AUDIO DUB**.

- AV insert editing is selected if both **AUDIO DUB** and **INSERT** are selected.
- If once selected, Insert or Audio Dubbing mode is still active even if the On Screen Display disappears by pressing **EDIT MENU**.

6

Start playback on the playback unit.

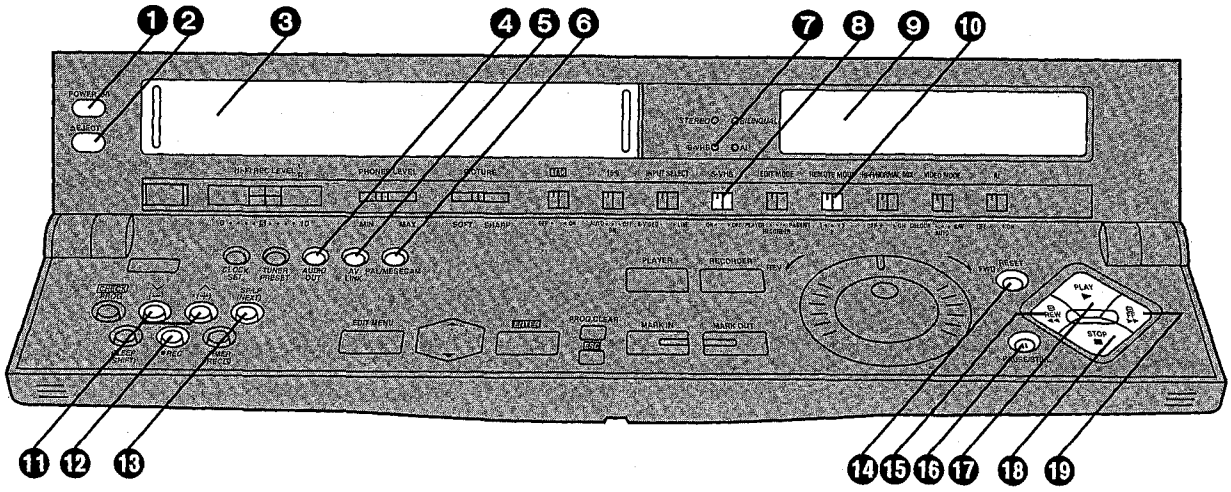
7 PAUSE/STILL

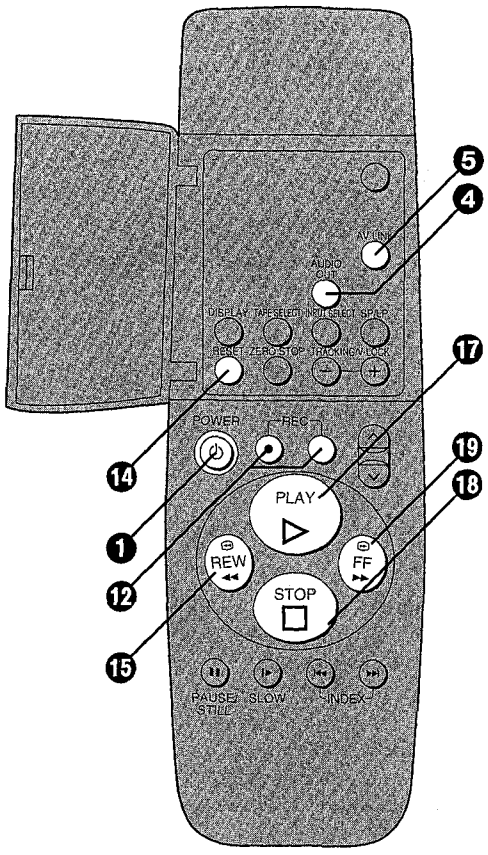


Press **PAUSE/STILL**.

- Editing begins.
- Insert and AV insert editing will finish when the counter reaches 0:00.00.
- Press **STOP** to stop audio dubbing.

Controls and Connection Sockets





Basic Controls

❶ POWER ⏻/I
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still connected to the mains.

❷ EJECT
To eject a video cassette.

❸ Cassette Compartment
Insert a video cassette here.

❹ *AUDIO OUT*
To select the desired sound mode.
At the every push of this button, the audio output mode changes as follows.

┌→Stereo→Left→Right→Normal audio track─┐

The Left and Right Indicators show which sound mode is selected in the following way.

Stereo: Both the Left and Right Indicators are lit.
Left: The Left Indicator is lit.
Right: The Right Indicator is lit.
Normal: Both the Left and Right Indicators are not lit.

❺ AV LINK
To select the VTR mode or TV mode for AV LINK.

❻ PAL/MESECAM
Set according to the colour TV system used during recording and playback.
When the MESECAM Indicator is lit, the MESECAM system is selected.

❼ S-VHS Indicator
Lights up when the S-VHS switch is set to ON.

⑧ S-VHS
When recording on an S-VHS cassette tape, select the desired recording format with this switch.
ON: The recording will be made in the S-VHS format.
•The S-VHS indicator lights up.
OFF The recording will be made in the VHS format.
•The S-VHS indicator does not light up.
(It is possible to make a recording on an S-VHS cassette tape in the VHS format, for example, in order to play back the tape on another VHS VTR.)
•When using VHS cassettes, the recording is made in the VHS format irrespective of the position to which this switch is set.
•For playback, it is not necessary to operate this switch.
•When a tape which was recorded in the S-VHS format is played back on a conventional VHS VTR, it is not possible to obtain playback picture.

⑨ Display

⑩ REMOTE MODE
VTR1 Set to this position.
VTR2: No function.
VTR3: No function.

⑪ ∨(−) ∧(+)
To select the required programme position (TV station).
To set the clock and timer recording.

⑫ REC
To start a recording.

⑬ SP/LP (NEXT)
To select the tape speed required for recording.
SP gives the best picture quality.
LP gives the longest recording time.
To proceed to the next item during setting procedure.

⑭ RESET
To reset the tape counter (elapsed time) to "0:00.00"
•The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

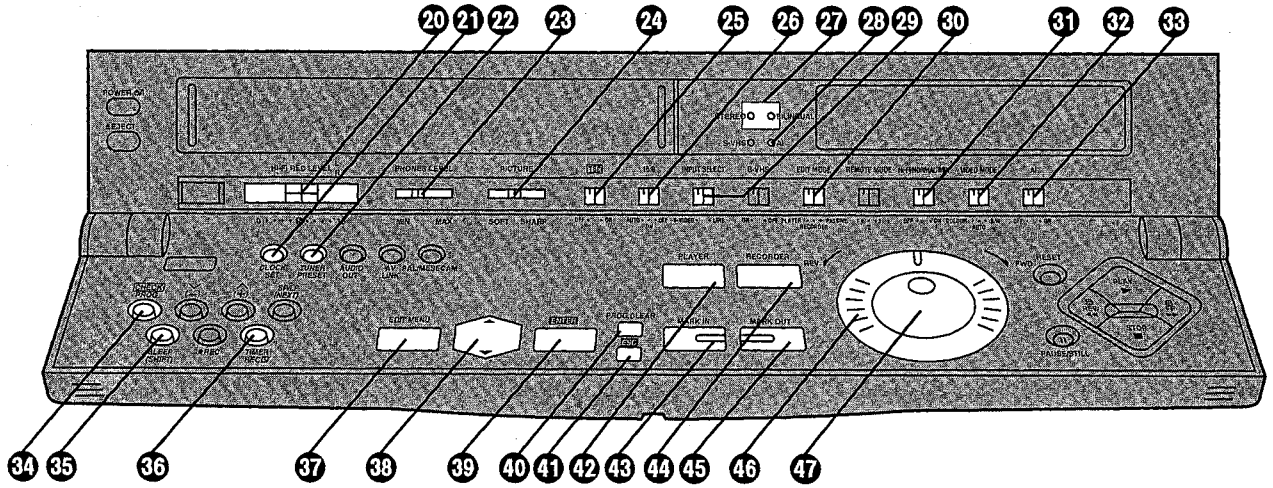
⑮ REW (REWIND)
In the stop mode: To rewind the tape.
In the playback mode: To search backward.
In the rewind mode: To obtain high speed picture. "◁◁" is lit.

⑯ PAUSE/STILL
In the stop mode: Still picture (Jog/Shuttle mode)
During playback: Still picture (Jog/Shuttle mode)
During recording: To interrupt recording

⑰ PLAY
To start playback. "▷" is lit.

⑱ STOP
To stop any playback or recording.

⑲ FF (FAST FORWARD)
In the stop mode: To fast forward the tape.
In the playback mode: To search forward.
In the fast forward mode: To obtain high speed picture. "▷▷" is lit.



Advanced Controls

20 Hi-Fi REC LEVEL
To adjust the recording level to peak at +4 dB on the recording level indicator.

21 CLOCK SET
To set the time.

22 TUNER PRESET
To initiate TV station settings for the tuner

23 PHONES LEVEL
For adjusting the volume level of connected stereo headphones.

24 PICTURE
To make picture sharper (SHARP) or softer (SOFT).

25 TBC
When the tape in the cassette is loose or damaged, or when the tape movement is unstable during recording or playback, the playback picture may shake from side to side and the picture may become distorted. In this case, activate the Time Base Corrector by setting the TBC Switch to ON, and the picture will become stable and the shaking will be minimized.
- For normal use, set the TBC Switch to OFF
- During playback of some pre-recorded tapes, the tape may shake vertically. In such a case, set the TBC Switch to OFF
- This function only works during normal playback in the PAL system.

26 16:9
AUTO: For automatically identifying the pictures as 16:9 pictures or 4:3 pictures during recording and playback and showing them on the wide TV screen.
- Normally set at this position.

ON: For recording and playback in such a way that the pictures expanded to 16:9 are shown on the wide TV screen at all time.

OFF: For recording and playback in such a way that 4:3 pictures are shown on the wide or 4:3 TV screen at all times.

27 STEREO and BILINGUAL Indicators
When receiving a TV programme, the type of sound system in which it is broadcast is automatically indicated.

28 AI Indicator
Lights up when the AI function is on.

29 INPUT SELECT
When Recording via the AV3 sockets on the front panel, select A3 by pressing ∧ ∨ and set this switch to S-VIDEO or LINE.
S-VIDEO: Through the S-VIDEO IN and AUDIO IN sockets
LINE. Through the VIDEO IN and AUDIO IN sockets

30 EDIT MODE
PLAYER: When this VTR is used as the playback VTR during editing operations.
RECORDER: When this VTR is used as the recording VTR during editing operations.
- Normally set at this position.

PASSIVE. When operating this VTR using another VTR or an editing controller.
- The picture quality best suited for editing is selected.
- When setting at this position, operation will not be possible and the On Screen Display will not appear.

31 Hi-Fi/NORMAL MIX
OFF Normally set at this position to reproduce the better sound available from the Hi-Fi track.
ON: Both sound tracks (the Hi-Fi sound track and the normal sound track) are played back mixed together Use this setting when playing back a cassette tape which has been insert edited or audio dubbed.

32 VIDEO MODE

COLOUR: When performing recording and playback in colour.

AUTO: The VTR automatically distinguishes between colour and black-and-white during recording and playback.

B/W: When performing recording and playback in black-and-white.

33 AI

ON: Using the AI function, recording and playback are performed in the state which achieves optimum picture quality in light of characteristics of a tape.

- The picture sharpness cannot be adjusted in this setting.

OFF Turns off the AI function.

34 CHECK/PROG

To select a timer programme number.
"1, 2, 3... or 8" is lit.
To display details of preset timer recording.

35 SLEEP (SHIFT)

To set the time to turn off the VTR automatically.
To blank unoccupied programme position.

36 TIMER REC

To turn the timer recording function on and off.
⏲ is lit or not lit.
Once Operating timer recording function, the normal VTR operation is not possible unless this button is set to off.

37 EDIT MENU

To perform editing operations.

38 ▲▼

To make selections from On Screen Display.

39 ENTER

To make selections from On Screen Display.

40 PROG. CLEAR

To cancel an editing programme.

41 ESC

To return to the previous page on the screen.
To stop editing.

42 PLAYER

To operate the playback VTR.

43 MARK IN

To set the edit start point.

44 RECORDER

To operate the recording VTR.

45 MARK OUT

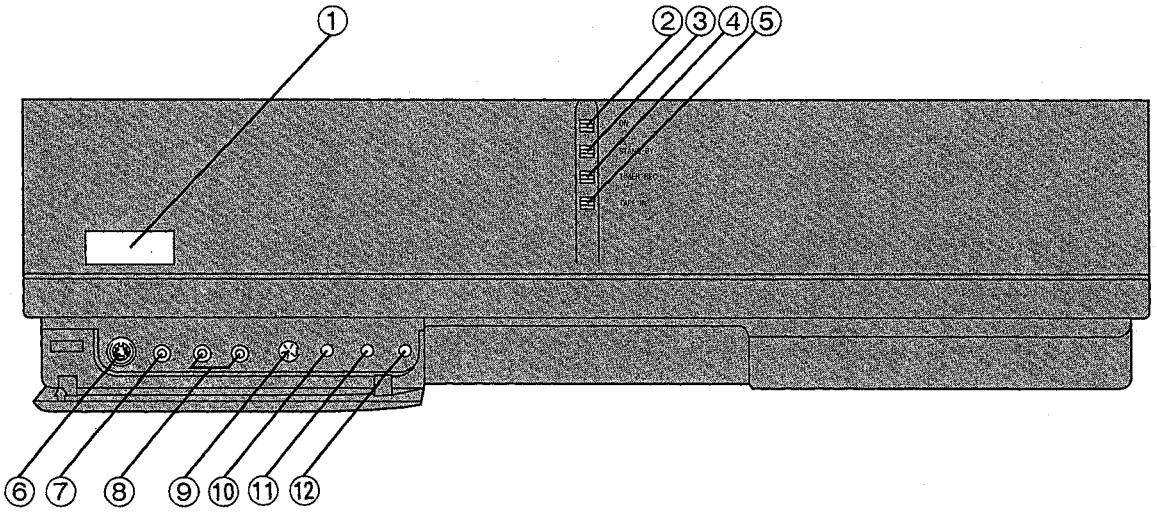
To set the edit end point.

46 Shuttle Ring

To adjust playback speed backward or forward.

47 Jog Dial

To locate any desired frame with utmost precision.



① **Infrared Remote Control Receiver Window**

② **ON Indicator**
Lights up when the VTR is turned on.

③ **STAND BY Indicator**
Lights up when the AC mains lead is connected and the VTR is turned off.

④ **TIMER REC Indicator**
Lights up when the timer recording function is on.

⑤ **TAPE IN Indicator**
Lights up when a cassette is inserted.

⑥ **S-VIDEO IN (AV3)**
To connect the S-Video cable to a movie camera or to another VTR that has a S-Video output socket.

⑦ **VIDEO IN (AV3)**
To connect the video cable to a movie camera or to another VTR.

⑧ **AUDIO IN (AV3)**
To connect the audio cable to a movie camera or to another VTR.

⑨ **EDIT (5 pin)**
To connect another VTR equipped with an edit socket or an editing controller.

⑩ **SYNC. EDIT**
To connect a movie camera or another VTR equipped with synchronized editing capability.

⑪ **MIC**
To connect a microphone for recording. Once connected, this socket has priority.

⑫ **PHONES**
To connect stereo headphones.

⑬ **RF OUT**
To connect to the aerial terminal on a TV set.

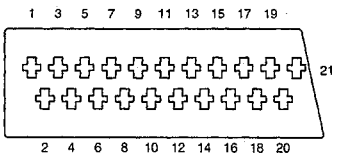
⑭ **NORMAL/S-VIDEO OUT/TEST SIGNAL**
NORMAL. Normally set to this position.
S-VIDEO OUT (AV1):
Set to this position when connecting the VTR to a TV set equipped with 21-pin Euro-AV Connector with pins for separate Y/C signal input.
TEST SIGNAL.
Set to this position when tuning the TV into the VTR.
The test signal is transmitted on channel 36 and AV1.

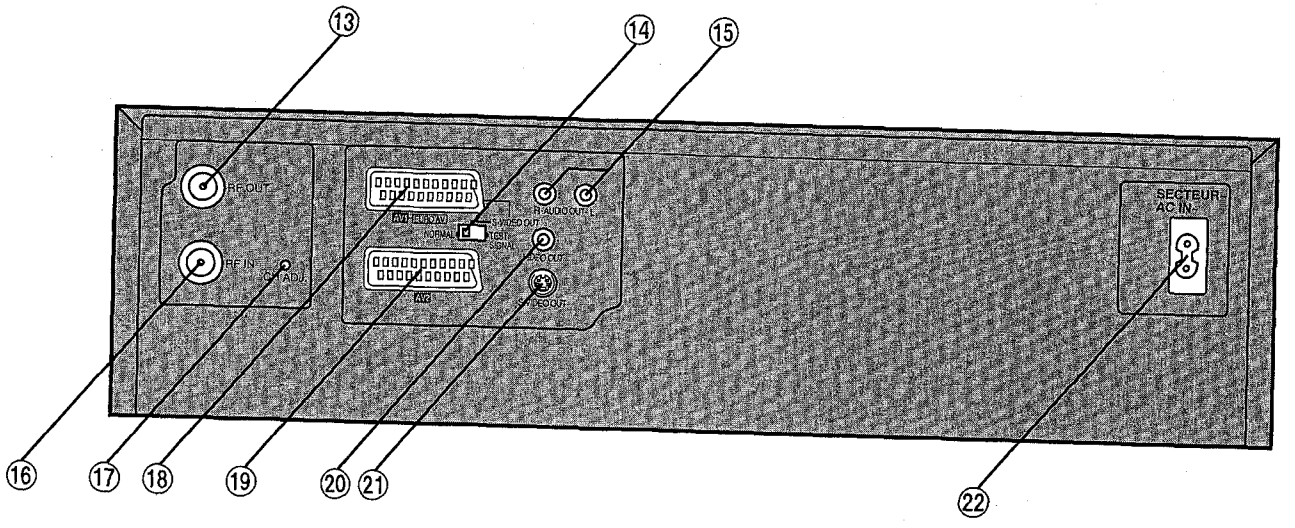
⑮ **AUDIO OUT**
To connect the audio cable to a TV or another VTR.

⑯ **RF IN**
To connect to the external aerial.

⑰ **CH ADJ.**
To adjust the RF transmitting channel 32~40.

⑱ **AV1**
This 21-pin scart terminal carries input and output signals for both picture and sound. TV sets equipped with a similar socket can be connected here.
This is also called Scart
Peritel
Euro Connector
Euro AV





NORMAL (AV1/AV2)	S-VIDEO (AV1)
1 AUDIO OUTPUT CH2 (R)	1 AUDIO OUTPUT CH2 (R)
2 AUDIO INPUT CH2 (R)	2 AUDIO INPUT CH2 (R)
3 AUDIO OUTPUT CH1 (L)	3 AUDIO OUTPUT CH1 (L)
4 AUDIO GND	4 AUDIO GND
5 BLUE GND	5 No connection
6 AUDIO INPUT CH1 (L)	6 AUDIO INPUT CH1 (L)
7 BLUE	7 No connection
8 SWITCHING VOLTAGE	8 SWITCHING VOLTAGE
9 GREEN GND	9 No connection
10 No connection	10 No connection
11 GREEN	11 No connection
12 No connection	12 No connection
13 RED GND	13 No connection
14 BLANKING GND	14 No connection
15 RED	15 C OUT
16 BLANKING	16 No connection
17 VIDEO OUTPUT GND	17 VIDEO OUTPUT GND
18 VIDEO INPUT GND	18 No connection
19 VIDEO OUTPUT	19 Y OUT
20 VIDEO INPUT	20 VIDEO INPUT
21 GND	21 GND

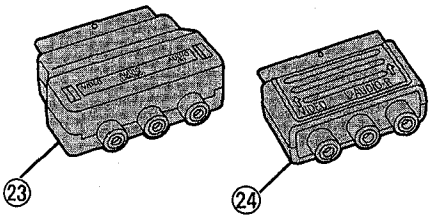
Caution: RGB reservation for only E/E operation when connecting the Pay TV decoder

⑲ **AV2**
To connect to a decoder or another VTR.
•Only used as the input socket.

⑳ **VIDEO OUT**
To connect the video cable to a TV or another VTR.

㉑ **S-VIDEO OUT**
To connect the S-Video cable to a TV or another VTR that has a S-Video input socket.

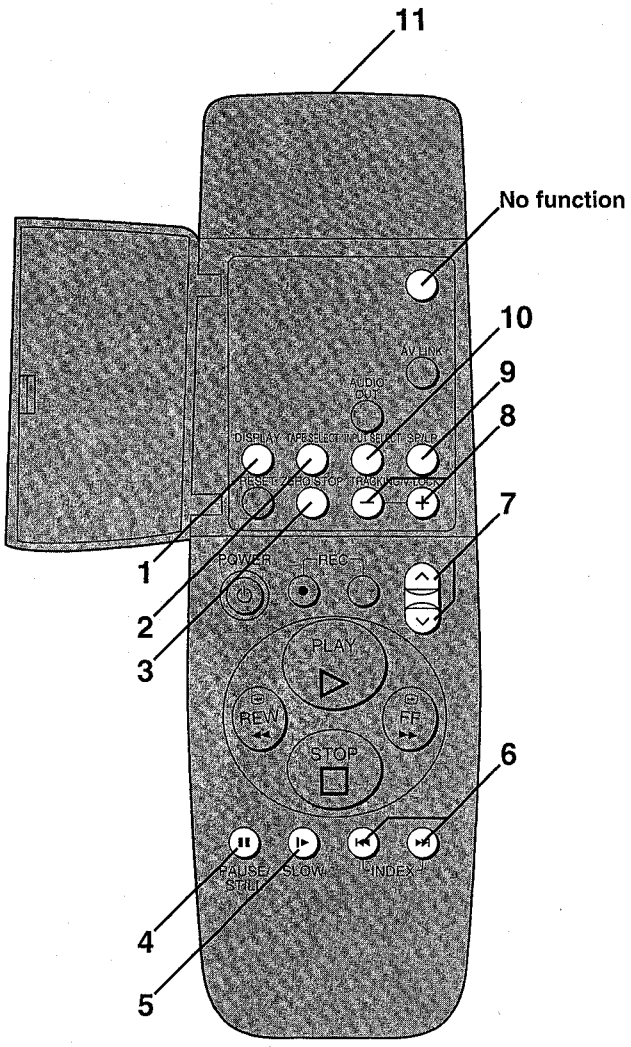
㉒ **AC IN~**
To connect to the main power supply.



㉓ **21 pin—Phono Transformer Adaptor (Output)**
Inserting this adaptor into AV1 allows it to be used as the Phono Audio/Video output socket.
VIDEO: To connect the video cable to a TV or another VTR.
AUDIO (L/MONO, R): To connect the audio cable to a TV or another VTR.

㉔ **21 pin—Phono Transformer Adaptor (Input)**
Inserting this adaptor into AV1 or AV2 allows it to be used as the Phono Audio/Video input socket.
VIDEO: To connect the video cable to a movie camera or another VTR.
AUDIO (L/R): To connect the audio cable to a movie camera or another VTR.

Infra-red Remote Controller



1 DISPLAY
To change the indication on the VTR Display.

→Clock→Counter→Remaining Tape Time→

2 TAPE SELECT
To set the cassette tape length in order to obtain correct indication of the remaining tape time.
E195: For E30, -60, -90, -120, -180 and -195 tapes
E240: For E240 tape
E260: For E260 and -300 tapes

3 ZERO STOP
For the zero stop function.

4 PAUSE/STILL
During playback: Still picture
During recording: To interrupt recording

5 SLOW
To activate slow playback.

6 INDEX
For the index search function.

7 ∨∧
To select the required programme position (TV station) of the VTR.

8 TRACKING/V-LOCK
For manual tracking adjustment
The + and – buttons are used to adjust the tracking when, for example, noise bars on the picture are better removed manually than by the automatic digital tracking control. After making a manual adjustment, press both buttons together to return to automatic digital tracking control.

For slow tracking adjustment
When noise bars appear during Still, Still Advance or Slow playback, switch over to slow playback and adjust with the + or – Button to reduce the noise bars.

For vertical locking adjustment
Use the + and – buttons to minimize any vertical jitter during still-picture playback.

9 SP/LP
To select the tape speed desired for recording.

10 INPUT SELECT
To select the "A1", "A2" or "A3" external recording source.

11 Infra-red Transmitter

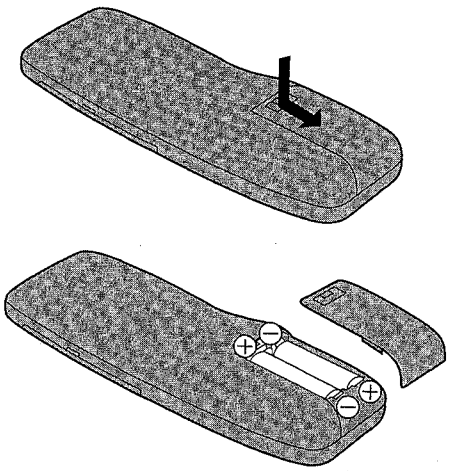
Power Source for the Remote Controller

The remote controller is powered by 2 "UM3" or "R6" size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

Precautions for Battery Replacement

- Load the new batteries with their polarity (⊕ and ⊖) aligned correctly.
- Do not apply heat to the batteries, or an internal short-circuit may occur.
- If you do not intend to use the remote controller for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.

Installing the Batteries



Before Requesting Service

Before requesting service, check the following points once again.

VTR will not operate correctly			
SYMPTOM	CAUSE	REMEDY	CHECKED
VTR display is not illuminated.	Mains lead is not connected.	Reconnect mains lead to VTR.	
VTR display is illuminated but VTR will not operate.	VTR is in timer mode.	Press TIMER REC to operate VTR manually.	
	Safety devices are operating.	Disconnect mains lead and wait for 1 minute. Reconnect mains supply and check functions.	
	Condensation may have formed.	Do not operate VTR for 1 hour	

Playback will not operate correctly			
SYMPTOM	CAUSE	REMEDY	CHECKED
Picture noisy or not in colour Horizontal bars or lines run down the screen.	Tracking is not correct.	Adjust the tracking. See page 46.	
	TV set is not tuned to VTR.	Operate NORMAL/S-VIDEO OUT/TEST SIGNAL on VTR and check TV tuning. See page 7	
	Video heads are clogged or worn.	Consult your dealer for further advice.	
	Colour TV system is not set correctly.	Set correct colour TV system.	

Recording will not operate correctly			
SYMPTOM	**CAUSE**	**REMEDY**	**CHECKED**
"📼" indication flashes whenever recording is attempted.	Erasure prevention tab on cassette is broken off.	Use tape with intact erasure prevention tab, or cover tab hole with adhesive tape, if original recording is no longer required.	
Picture is recorded with noise or blank screen.	Aerial or aerial lead is defective.	Check aerial connection to VTR. See page 4. Check your normal TV picture. If there is no picture, check your aerial.	
	VTR is not correctly tuned.	Re-tune VTR. See page 10.	
	A1, A2 or A3 is selected.	Select the required TV programme.	
Timer recording cannot be performed.	Clock or calendar is incorrectly set.	Check clock and calendar Set to present time. (Note this is a 24 hour clock.) See page 8.	
	Recording start or end time settings are incorrect.	Set recording start and end time correctly.	
	VTR is not set for timer recording.	Press TIMER REC after programming for timer recording.	
AV external recordings cannot be made.	A1, A2 or A3 is not selected.	Select A1, A2 or A3 by pressing ∧∨	
	External AV connections are incorrect.	Check that connections for external video and audio source are correct. See page 21	

Remote controller will not work correctly			
SYMPTOM	**CAUSE**	**REMEDY**	**CHECKED**
Remote controller does not operate correctly.	Remote controller transmitter beam is not reaching VTR.	Ensure that remote controller is being pointed at VTR and that transmitter beam is not obstructed.	
	Distance is too far	Use remote controller within 7 m of VTR. If this range is not possible, replace batteries.	
	Batteries are exhausted.	Replace batteries. Note precaution for replacement on page 47	
	Batteries are incorrectly fitted with (+/−) reversed.	Fit batteries correctly as shown on page 47	

Precautions

Please read these cautions before you operate this VTR.

Avoid Sudden Changes in Temperature

If the VTR is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the VTR.

Humidity and Dust

Avoid places where there is high humidity or much dust, which may cause damage to internal parts.

Do Not Obstruct the Ventilation Holes

The ventilation holes prevent abnormal increase in temperature. Do not block or cover these holes. Especially avoid covering the holes with soft materials such as cloth or paper.

Keep away from High Temperature

Keep the VTR away from extreme direct heat such as direct sunlight, heating radiators, or closed automobiles.

Keep Magnets away

Never bring a magnet or magnetized object near the VTR because it will adversely affect the performance of the VTR.

No Fingers or Other Objects Inside

Touching internal parts of this VTR is dangerous, and may cause serious damage to the VTR. Do not attempt to disassemble the VTR. There are no user serviceable parts inside.

Keep Water away

Keep the VTR away from flower vases, tubs, sinks, etc.
CAUTION: If liquids are spilled into the VTR, serious damage could occur. If you spill any liquid into the VTR, consult qualified service personnel.

Lightning

To avoid damage by lightning, disconnect the aerial plug from the VTR.

Cleaning the VTR

Wipe the VTR with a clean, dry cloth. Never use cleaning fluid, or other chemicals. And do not use compressed air to remove dust.

Stacking

Place the VTR in a horizontal position, and do not place anything heavy on it.

Video Head Clogging

The video heads place picture signals on the tape during recording and read picture signals from the tape during playback and they are, therefore, of critical importance for the picture quality. If the VTR is used over extremely long periods of time, these heads may still become dirty and clogged. In such a case, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such a symptom case occurs have the recorder checked by qualified service personnel.

Condensation may form in the VTR if:

- The VTR is in a room when the heater has just been turned on.
- The VTR is in a room with steam or high humidity.
- The VTR is brought from cold surroundings into a well-heated room.
- The VTR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

Note:
Do not operate the VTR for at least 1 hour if any of the above conditions occur.
This VTR does not incorporate a dew sensor.

Specifications

AG-4700E

Power Source:	220–240 V AC 50–60 Hz
Power Consumption:	41 watts

Video Recording System:	2 rotary heads, helical scanning system		
Video Heads:	4 heads		
Tape Speed:	SP; 23.39 mm/sec. LP; 11.7 mm/sec.		
Tape Format:	VHS/S-VHS tape		
Record/Playback Time:	SP; 240 min. with NV-E240 LP; 480 min. with NV-E240	SP; 260 min. with NV-SE260 LP; 520 min. with NV-SE260	
VIDEO			
Television System:	CCIR; 625 lines, 50 fields, PAL colour signal		
Modulation System:	Luminance; FM azimuth recording Colour signal; converted subcarrier phase shift recording		
Input Level:	AV1/AV2;	1.0 Vp-p,	75 ohm, terminated
	VIDEO IN (AV3) (PHONO);	1.0 Vp-p,	75 ohm, terminated
	S-VIDEO IN (AV3);	1.0 Vp-p,	75 ohm, terminated
Output Level:	AV1/AV2;	1.0 Vp-p,	75 ohm, terminated
	VIDEO OUT (PHONO);	1.0 Vp-p,	75 ohm, terminated
	S-VIDEO OUT,	1.0 Vp-p,	75 ohm, terminated
	RF Modulated;	UHF channel 36 (±4),	75 ohm
AUDIO			
Input Level:	AV1/AV2;	−6 dBV,	more than 10 kohm
	AUDIO IN (AV3) (PHONO);	−10 dBV,	more than 47 kohm
	MICROPHONE (M3);	−70 dBV	
Output Level:	AV1/AV2;	−6 dBV,	less than 1 kohm
	AUDIO OUT (PHONO);	−8 dBV,	less than 1 kohm
	HEADPHONES;	−30 dBV,	8 ohm
Audio Track:	1 track (Normal-mono only), 2 channels (Hi-Fi sound-stereo)		
Video Horizontal Resolution:	Colour; more than 240 lines (VHS/SP) more than 400 lines (S-VHS/S-Video Socket)		
Dynamic Range:	Audio; more than 90 dB (Hi-Fi audio track)		
Audio Frequency Response:	20 Hz–20 kHz		
Wow and Flutter:	0.005% Wrms/Hi-Fi		
Operating Temperature:	5°C–40°C		
Operating Humidity:	35%–80%		
Weight:	7.0 kg		
Dimensions:	430 (W)×118 (H)×395 (D) mm		
Standard Accessories:	1 pc. Remote Controller 2 pcs. "R6" Size Batteries 2 pcs. 21 pin—Phono Transformer Adaptors (Input/Output) 1 pc. AC Mains Lead 1 pc. Edit Cable		

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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